CONSTRUCTION NEWS

PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

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PERSONAL.

Mr. A. F. Gill has been appointed City Engineer of Spokane, Wash.

Mr. James W. Pierce has been appointed City Engineer of Cambridge, Mass.

Mr. C. B. Hoyt has been appointed Water Commissioner of Portsmouth, N. H.

Mr. Frank I. Consaul has been appointed City Engineer of Toledo, O., succeeding Mr. Tonson, resigned.

Mr. Thomas Morrison, Superintendent of the Edgar Thomson Steel Works at Braddock, Pa., has resigned.

Mr. F. D. Casanave has resigned as General Superintendent of Motive Power of the Baltimore & Ohio R. R.

Mr. John A. Betjeman, Civil Engineer, has been appointed to the faculty of the new engineering school of Colorado College.

Mr. William E. Guthrie and Mr. William C. Matlock have been appointed Receivers of the Eastern Tube Co., of Zanesville, O.

Mr. R. L. Ellis, of Greenville, La., has been appointed Superintendent of the Port Gibson, Miss., Electric Light and Water-Works.

Mr. Edgar E. Calvin has been promoted from General Superintendent to Assistant General Manager of the Oregon Short Line Ry.

Mr. Henry Matthieu, for the past 10 years Superintendent of the water-works system and electric light plant of Hallettsville, Tex., has resigned.

Mr. W. O. Duntley, Vice-President and General Manager of the Chicago Pneumatic Tool Co., has recently returned from a short business trip abroad.

Messrs. Shutts & Duller, of Lake Charles, La., are Chief Engineers for the Gulf, Calcasien & Northern Ry., and Mr. F. Shutts, City Engineer of Lake Charles, is Locating Engineer.

Mr. R. A. Pendergrass, of the McClintic-Marshall Construction Co., has been transferred from the Erecting Department, Pittsburg District, to the New York contracting department.

Mr. C. W. Wurst has been appointed Superintendent of Motive Power and Machinery of the El Paso-Northeastern Ry., with headquarters at Alamogordo, N. Mex., succeeding Mr. W. C. Parsons.

Mr. S. K. Smith, formerly Chief Engineer of the Rocky Fork Coal Co. and the Northwestern Improvement Co., has located in Red Lodge, Mont., and will carry on a practice in civil engineering.

Mr. O. M. Shepard has been appointed General Superintendent of the New York, New Haven & Hartford R. R., in charge of the rail lines and lighterage department, with office in New Haven, Conn.

Mr. E. O. Edson is appointed Secretary and Treasurer of the Laufketter-Bendit M. E. Co., of St. Louis, Mo., succeeding Mr. F. C. Laufketter, who retires to become President of the Victor Mfg. Co., of that city.

Mr L. T. Canfield has been appointed Superintendent of Motive Power and Machinery of the Mexican Great Western Ry., with headquarters at Mexico City, Mex. His temporary headquarters will be at 120 Liberty St., New York.

Mr. George A. Yuille, formerly Vice-President and General Manager of the West Chicago Street Ry. Co., has been made Secretary and General Manager of the Chicago Engineering & Constructing Co., which takes over the engineering and contracting business of Weston Brothers, Chicago.

Mr. J. B. Rohrer, Civil Engineer, has become interested in the American-Hawaiian Engineering & Construction Co., Ltd., which company has offices in San Francisco, Cal., and Honolulu, H. I. Mr. Rohrer will be Assistant Manager and will have his headquarters in the Rialto Building, San Francisco.

Mr. Edwin G. Nicewarner, C. E., has been appointed Superintendent of the Bureau of Highways and Sewers, Department of Public Works, of Pittsburg, Pa. Mr. Nicewarner was for several years Assistant Engineer in charge of bridge substructural work in the Bureau of Construction of that city. The Bureau of Highways and Sewers cares for the maintenance of the highways and their cleaning.

Mr. J. H. Rice, of Ashtabula, O., has resigned his position in the engineering corps of the Lake Shore & Michigan Southern R. R., to accept the position of Superintendent of Construction with the Dow Chemical Co., of Midland, Md., with headquarters at Mt. Pleasant, O. Mr. Rice is a graduate of Case School, and was recently in charge of the engineering work in connection with the construction of the new shops and yards for the Lake Shore road at Collinwood.

OBITUARY.

Mr. Robert G. Hilton, Civil Engineer, in the employ of the Government on harbor work at Savannah, Ga., killed himself on May 19, by jumping from an upper veranda of the St. Joseph Hospital in that city, where he was a patient with intermittent fever.

Mr. Frederick Rawolle, former civil engineer, member of the firm of Marx & Rawolle, glycerine refiners, died in New York city on May 18, aged 62 years. He was one of the engineers who surveyed Prospect Park in Brooklyn in 1860, and later assisted in the survey of the Union Pacific R. R.

Mr. Samuel G. Ramsey, General Manager of the Peninsula Consolidated Railroads, died in Merida, Mex., on May 19. He was 52 years old, and was a native of Philadelphia. After leaving Philadelphia he entered the Northern Pacific R. R., becoming its Superintendent. He later became Superintendent of Transportation of the Inter-Oceanic Ry. of Mexico.

Mr. Samuel E. McElroy, Civil Engineer, dropped dead in his office in the Garfield Bldg., Brooklyn, N. Y., on May 22, of heart failure, supposed to have been brought on by an electric shock sustained two weeks before while boarding an electric car at Canarsie. Mr. McElroy was a native of Albany, and was 55 years old. He surveyed and laid out the route of the Continental Ry., which was intended to traverse the country from New York to San Francisco; but the survey ended at Chicago. The other prominent public works with which he was connected were the Sea Beach R. R., the Prospect Park & Coney Island R. R., the South Brooklyn Terminal R. R. cut, the Clifton, Gravesend and Parkway race tracks, and the New Utrecht and Flatbush sewer system.

Mr. Henry C. Draper, who was for several years Chief Engineer of the Chicago & Alton Ry., died May 23, from paralysis, after an illness of nearly a year. Mr. Draper was born at Louisiana, Mo., Feb. 3, 1845, and was in the service of the Chicago & Alton Ry. for about 30 years, working up from chainman to Chief Engineer. He commenced his railway career in 1868 as a rodman on the Louisiana & Missouri River Ry., now a part of the Chicago & Alton Ry. system. He was Division Engineer of this latter road from 1876 to 1892, and Chief Engineer from 1892 to 1900. After leaving this road he went with the Missouri Pacific Ry. as Engineer in Charge of Construction, and later he was Consulting Engineer for the Mississippi Valley Trust Co., of St. Louis, which company financed a number of railways. Mr. Draper was a member of the American Railway Engineering & Maintenance of Way Association, and the Western Society of Engineers; he was also a member of the Grand Army of the Republic.

ENGINEERING SOCIETIES

COMING MEETINGS.

AMERICAN SOCIETY OF CIVIL ENGINEERS.
June 8. Annual convention at Asheville, N. C. Secy., C. W. Hunt, 220 W. 57th St., New York.

AMERICAN FOUNDRYMEN'S ASSOCIATION.
June 9, 10, 11. Annual convention at Milwaukee, Wis. Secy., Richard Moldenke, P. O. Box 432, New York city.

CANADIAN ELECTRICAL ASSOCIATION.
June 10, 11, 12. Annual convention at Toronto, Ont. Secy., C. H. Mortimer, Toronto.

INTERNATIONAL ASSOCIATION OF CAR ACCOUNTANTS AND CAR SERVICE OFFICERS.
June 17, 18. Annual meeting at Quebec, Canada. Secy., L. G. Corcoran, Buffalo, N. Y.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
June 22 to 26. Annual meeting at Saratoga, N. Y. Secy., Prof. F. R. Hutton, 12 West 31st St., New York city.

AMERICAN WATER-WORKS ASSOCIATION.
June 23 to 26. Annual meeting at Detroit, Mich. Secy., J. M. Diven, Elmira, N. Y.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.
June 24, 25, 26. Annual convention at Saratoga Springs, N. Y. Secy., J. W. Taylor, Rookery Building, Chicago.

MASTER CAR BUILDERS' ASSOCIATION.
June 29, July 1. Annual convention at Saratoga Springs, N. Y. Secy., J. W. Taylor, Rookery Building, Chicago.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
June 29, July 2. Annual convention at Niagara Falls, N. Y. Secy., R. W. Pope, 95 Liberty St., New York.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.
July 1, 2, 3. Annual convention at Niagara Falls, N. Y. Secy., C. A. Waldo, Purdue University, Lafayette, Ind.

AMERICAN SOCIETY FOR TESTING MATERIALS.
July 1, 2, 3. Annual meeting at Delaware Water Gap, N. J. Secy., E. Marburg, University of Pennsylvania, Philadelphia.

AMERICAN PARK AND OUTDOOR ART ASSOCIATION.
July 7, 8, 9. Annual meeting at Buffalo, N. Y. Secy., C. M. Robinson, Rochester, N. Y.

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS.
July 17, 18. Annual convention at Niagara Falls, N. Y. Secy., W. M. Mackay, P. O. Box 1,818, New York city.

AMERICAN STREET RAILWAY ASSOCIATION.
Sept. 2 to 4. Annual convention at Saratoga Springs, N. Y. Secy., T. C. Penington, 2020 State St., Chicago, Illinois.

ENGINEERS' CLUB OF MINNEAPOLIS.—The club celebrated its twentieth anniversary on May 22, 1903, by an informal smoker with a special entertainment program. —Secy., J. B. Gilman, 1225 Seventh St., S. E., Minneapolis, Minn.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—The local members of the society who have in charge the preparations for the convention at Saratoga, N. Y., on June 23 to 26, have selected the United States Hotel as the headquarters during the convention. The various sessions of the meeting will be held at this hotel. A quite elaborate social program is being prepared for the meeting, and there will be numerous excursions to points of technical interest, such as to the works of the American Locomotive Co., and the General Electric Co., the water-power development at Spiers' Falls on the Hudson, etc.

WESTERN SOCIETY OF ENGINEERS.—At the meeting on May 20, Mr. W. W. Curtis presented a paper on "Timber Preservation." He estimated that in the 12 years previous to 1899 about 10,000,000 treated ties had been laid in this country, while the same number would probably be laid in the 12 months of the present year. This is due to the fact that railways cannot get the best wood for ties, and as untreated inferior woods give but a short life it is real economy to treat these ties, thus getting a treated tie at about the same price as a good quality untreated tie, or at even a less price. The author described the various preservative processes in use at the 16 plants now in operation, and pointed out the superiority of the creosoting process, although its cost makes it prohibitive in this country, where the treatment alone would cost about 32 cts. per tie. He considered the zinc and zinc-tannin the best practical methods now in use, for while other methods promise good results the experience with them is yet too short to allow of definite conclusions. Mr. Curtis described the tie-treating plant of the Ayer & Lord Co., at Carbondale, Ill., which has six cylinders 6 × 125 ft., and space for two additional cylinders. This plant was described in our issue of May 22, 1902. The paper was illustrated by numerous views of these works, and by lantern slides having thin slices of various woods, thus showing the structure of the wood without the aid of photographic reproduction.

WESTERN RAILWAY CLUB.—At the annual meeting on May 19, Mr. F. W. Edwards, of the Ohio Injector Co., presented a short paper on "Injectors as they are Met With in Railway Practice." He pointed out that more care should be taken in locating the injectors on locomotives, in using proper sizes of pipe, and in using hose connections of size suitable to the pipes. Many modern heavy engines have a 1½-in. or 1⅝-in. hose coupled onto a 2½-in. suction pipe. The injector should be examined and tested when an engineman reports trouble. This will often obviate the necessity of removing the injector, especially if the engineman is required to note the character of the trouble and the conditions under which the engine was working when the trouble developed. A somewhat similar paper was then read by Mr. Royal, of the Nathan Mfg. Co.

In opening the discussion, Mr. Peck (C. & W. I. R. R.) remarked that he does not use the boiler check on any of his 40 engines. Instead, he uses an angle cock 8 ft. from the feed inlet, which is fully as effective, and is safer and more convenient. He has not used any non-lifting injectors for several years. Professor Goss (Purdue University) thought it bad practice to couple two injectors to one delivery pipe, as is sometimes done. He thought the equipment should be duplicate throughout, so that one might be in reserve, in case of any failure to the other. Mr. M. K. Barnum (C., R. I. & P. Ry.) and others discussed the question of the best location for the injectors.

The Secretary presented his report, showing a membership of 1,108 members, and a cash balance of $883. The election of officers was then taken up, and the officers for the ensuing year are as follows: President, D. F.

Crawford (P., Ft. W. & C. Ry.); First Vice-President, L. G. Parrish (L. S. & M. S. Ry.); Second Vice-President, J. A. Carney (C., B. & Q. Ry); Treasurer, Peter H. Peck (C. & W. I. Ry.); Secretary, Joseph Taylor, Chicago.

RAILWAY SIGNALING CLUB.—At the meeting held in Chicago on May 12, the first subject taken up for discussion was the consideration given to the block system in preparing time-tables for roads using this system. The Pittsburg & Lake Erie R. R. has automatic block signals 4,000 ft. apart from Pittsburg to Youngstown, and the installation has resulted in reducing the time of freight trains in getting over the division by 33 to 50%. Trains can follow one another very closely, and rear-end collisions have been reduced to a minimum. In a written discussion Mr. Paternall stated that on the 80 miles of automatic block signaling on the Baltimore & Ohio R. R. the block-signaling capacity is taken into consideration in preparing the time-table. On the Lehigh Valley R. R. it is found that under the block system the slow trains keep moving until given an order to take a siding, thus effecting a great reduction in the running time. Mr. Elliott (C., M. & St. P. Ry.) remarked that if the schedule was not arranged for trains to be run at least a block apart, they could not be maintained, as the trains would be held by the signals.

The next subject was the question whether introducing the block system increased the capacity of the line. Mr. Elliott said that on single track, with the absolute block system, the capacity would be decreased. With blocks four miles long, the capacity of single track is about 55 trains per day, but if trains were run at three-minute intervals this number might be increased to 75 or 80 trains. Of course, if the signals were as close together as trains might be run at such intervals, there would be no decrease in capacity, but such short blocks are rarely used on account of the expense.

The protection of trains at passing sidings was then discussed. Mr. Morrison explained that the Erie R. R. provides interlocking plants at the facing switches and an electric lock at the trailing switches. The lock is operated from the signal tower, and no signal is used with it. A telephone connects the siding with the tower, so that the conductor can be called to the tower to receive orders. No orders are given by telephone. Mr. Foster (Pennsylvania Lines) said that his road uses a similar system, but with the addition of a signal to indicate when the train is to pull out of the siding. He suggested that instead of calling the conductor to the tower, the orders might be telephoned to him, but Mr. Elliott and others thought this would be a dangerous practice, owing to the liability of misunderstanding.

AMERICAN FOUNDRYMEN'S ASSOCIATION.—The Secretary has just issued the program drawn up for the annual meeting which will be held at Milwaukee, Wis., on June 9, 10 and 11. The opening session takes place at 10 a. m., June 9, and is entirely given up to addresses and committee reports. At the afternoon session of the same day Mr. J. L. Gobelle, of Cleveland, O., will present a paper on "The Organization, Maintenance and Management of a Modern Pattern Shop"; Mr. A. W. Walker, of Boston, Mass., on "A Simple Device for Ascertaining the Average Silicon in an Iron Mixture"; Mr. R. P. Cunningham, of Holyoke, Mass., on "Foundry Control"; Mr. David Spence, of Chicago, Ill., on "Foundry Management"; Mr. J. A. Murphy, of Erie, Pa., on "Permanent Molds"; Mr. E. Richelieu, of South Tacoma, Wash., on "Continuous Molding"; Mr. E. Gilmour, of Peoria, Ill., on "Molding Machines." A third session is slated for the evening of the same day, with papers on "Retort-oven Coke for Foundry Use," by Mr. W. J. Keep, of Detroit, Mich.; "Note on Estimating Methods," by Mr. Wm. Hanson, of Philadelphia, Pa.; "The Molding Machine," by Mr. S. H. Stupakoff, of Pittsburg, Pa.; "Malleable Cast Iron," by Mr. R. Moldenke, of New York, N. Y.; "Employer and Employee," by Mr. S. H. Stupakoff, of Pittsburg, Pa., and "The Principal Factors of the Iron Industry in the Birmingham District," by Mr. S. S. Knight, of Birmingham, Ala. On Wednesday morning, June 10, the following papers will be presented: Mr. H. Souther, of Hartford, Conn., on "The Metallurgical Engineer in the Foundry"; Mr. W. E. Dickson, of Sharpsville, Pa., on "Loss of Sulphur in Borings of Cast Iron"; Mr. P. Longmuir, of Sheffield, England, on "The Microstructure of Cast Iron"; Mr. W. W. Davis, of Roanoke, Va., on "Blast Furnace Conditions Affecting the Chemical Condition of Foundry Iron," and Mr. H. E. Field, of Ansonia, Conn., on "Buying Pig Iron on Specification." In addition to these regular papers, several miscellaneous matters will come before the convention for discussion, thus: Methods for Determining the Constituents of Cast Iron, The Disposal of Waste Coke, and Recovery of Nickel from Scrap Anodes used in the Nickel-plating Process. Numerous social features have been provided, such as a trolley ride to West Allis and the Soldiers' Home, a theatre party, excursions to parks, breweries and other points of interest, and a smoker at the Hotel Pfister (the convention headquarters), with music and "the stuff that made Milwaukee famous." The ladies will be cared for by a local reception committee of Milwaukee ladies.—Secy., Richard Moldenke, P. O. Box 432, New York City.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—At the regular meeting of May 20, Mr. D. M. Andrews presented a paper on "The Economic Improvement of the Coosa and Alabama Rivers, in Georgia and Alabama." These two rivers if improved according to existing plans would give a waterway 786 miles long, for light-draft boats, northward from Mobile, reaching coal fields, mineral and timber lands, etc. A length of 116 miles on the Coosa River must be canalized to make it navigable, while the larger part of the Alabama River, into which the Coosa flows, would require constant dredging; the latter work is roughly estimated in the paper, but the main portion concerns the canalization of the Coosa. Four-foot and six-foot navigation has been proposed for this river; it was desired to find the minimum cost of canalizing by dams and locks for each of these depths. This involved determining the most economical lift per lock. For this purpose the author formed an equation expressing the cost of the locks and dams, with the lift of the lock as the unknown; the design of overfall dam, lockwalls, etc., on which this formula is based is as shown in the paper by sketches, and the unit prices used were taken from some work done on this river and from the Warrior River improvement, in the same state. This formula was written for 4-ft. and for 6-ft. navigation, and its value in the two cases calculated for different values of x, the lift per lock, from 5 to 30 ft. The minimum cost was for a lift of 23.2 ft. per lock in case of 6-ft. navigation, and for a lift of 21.5 ft. in case of 4-ft. navigation. This was also shown in the paper by curves of total cost for varying lift per lock. The existing improvement project contemplates a much great number of locks, with different lifts, and the author compared this project with the "minimum-cost" project deduced from the formula, in respect to first cost and operating expense. He then discussed the question of the water power which might be utilized at the locks, and apparently concluded that a sufficient amount could be realized from this to pay the interest on first cost and the cost of operating for the entire navigation improvement. While this is open to considerable argument, one may more readily concur in the sentiment of the closing paragraph of the paper:

> The time has come when the power developed by dams built for purposes of navigation should be used in the industrial development of the country. This being true, why should not the public at large, as represented by the Government, reap some of the benefits?

There was, unfortunately, no discussion of this interesting paper beyond a letter from Capt. R. R. Raymond, under whose direction the investigation had been made, in which he explained the present status of the Coosa River work as affected by the unfavorable action of Congress in its last session. He also stated that several applications had been made for water-power concessions on the Coosa and had been reported favorably by engineer officers, but that no action had yet been taken toward granting them.

The program for the annual meeting of the society, to be held June 9, 10, 11 and 12, at Asheville, N. C., has been issued. According to this program, the opening session will begin at 2 p. m. on Tuesday, June 9, when the society's business will be transacted. In the evening the retiring President will read his address, and an informal dance follows. The sessions of Wednesday and Thursday morning are given up to topical discussion of various subjects, announced some weeks ago in this column; the afternoons and evenings are occupied by various excursions, a reception and a concert. An extra session on Friday morning will give opportunity for completing any unfinished business or professional matters.

CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS.

Bids to be opened.	Work.	Place.	See Eng. News.
May 28.	Paving, Sandy Hill, N. Y.		May 21
	Advertised, Engineering News, May 21.		
May 28.	Paving, Salem, Ind.		May 21
May 28.	Bridge work, New York, N. Y.		May 21
May 28.	Reservoir, Philadelphia, Pa.		May 21
	Advertised, Engineering News, May 21.		
May 28.	Boilers, (W.-W.), White Plains, N. Y.		May 21
May 28.	Fence work, New York, N. Y.		May 21
May 28.	Parapet wall, etc., New York, N. Y.		May 21
May 28.	Sewer system, Chattanooga, Tenn.		May 14
May 28.	Building, Fort Wadsworth, N. Y.		May 7
May 28.	Garbage crematory, Winthrop, Mass.		May 7
May 28.	Building, Tompkinsville, N. Y.		Apr. 30
	Advertised, Eng. News, Apr. 30 and May 7.		
May 28.	Sewers, Coldwater, Mich.		May 28
	Advertised, Eng. News, May 28.		
May 28.	Sewer, Boston, Mass.		May 28
	Advertised, Eng. News, May 28.		
May 29.	Boat wagons (30), Washington, D. C.		May 28
May 29.	Pier head, etc., Portland, Me.		May 21
May 29.	Paving, Lorain, O.		May 7
May 29.	Broken stone, etc., Duluth, Minn.		May 7
	Advertised, Eng. News, May 7 to 28.		
May 29.	Electric elevators, Washington, D. C.		May 14
May 29.	Building, Fort Myer, Va.		May 14
May 29.	Sewers, Aberdeen, S. Dak.		May 14
May 29.	Sea wall, Washington, D. C.		May 14
May 29.	Building, Chicago, Ill.		May 21
May 29.	Water and sewer systems, Washington, D.C.		May 21
May 29.	Garbage disposal, etc., Buffalo, N. Y.		May 21
May 29.	Bridge, Fletcher, Ont.		May 21
May 30.	Building, Beresford, S. Dak.		May 21
May 30.	Bridge, Alexandria, La.		May 21
May 30.	Light-house protection, Mobile, Ala.		May 7
	Advertised, Eng. News, May 7 to June 4.		
May 30.	Beacons, Mobile, Ala.		May 7
	Advertised, Eng. News, May 7 to June 4.		
May 30.	Harbor improvements, Jamaica.		Apr 2
	Advertised, Eng. News, Apr. 2 to May 14.		
May 31.	Water pipe, Montreal, Que.		May 28
Jun. 1.	Reservoir, San Luis Obispo, Cal.		May 28
Jun. 1.	Sewer, Fort Rosecrans, Cal.		May 28
Jun. 1.	Sewers, Halifax, N. S.		May 28
Jun. 1.	Bridge, Oakland, Cal.		May 28
Jun. 1.	Paving, New Orleans, La.		May 28
Jun. 1.	Paving brick, Detroit, Mich.		May 28
Jun. 1.	Bridge work, Woonsocket, R. I.		May 28
Jun. 1.	Bridge, Mauch Chunk, Pa.		May 28
Jun. 1.	Coaling plant, Alaska (U. S. Pos.)		Apr. 16
Jun. 1.	Bridge, Gettysburg, Pa.		Apr. 23
Jun. 1.	Electric plant plans, San Diego, Cal.		Apr. 30
	Advertised, Eng. News, Apr. 30 to May 28.		
Jun. 1.	Building, Monticello, Miss.		Apr. 30
	Advertised, Engineering News, Apr. 30.		
Jun. 1.	Building, Montgomery, Ala.		Apr. 30
	Advertised, Eng. News, Apr. 30 and May 7.		
Jun. 1.	Building, New York, N. Y.		May 14
Jun. 1.	Building, Vancouver, Wash.		May 14
Jun. 1.	Paving, Augusta, Ga.		May 14
	Advertised, Eng. News, May 14 to 28.		
Jun. 1.	Sewers, Lestershire, N. Y.		May 14
	Advertised, Eng. News, May 14 and 21.		
Jun. 1.	Sewers, Cuba, N. Y.		May 14
	Advertised, Engineering News, May 14.		
Jun. 1.	Building, Dayton, O.		May 14
Jun. 1.	Electric lighting, Lebanon, Pa.		May 14
	Advertised, Eng. News, May 14 and 21.		
Jun. 1.	Water-works, etc., San Diego, Cal.		May 14
Jun. 1.	Paving material, Haverhill, Mass.		May 21
	Advertised, Engineering News, May 21.		
Jun. 1.	Paving, Bluffton, Ind.		May 21
Jun. 1.	Paving, Ellwood, Ind.		May 21
Jun. 1.	Bridges (2), Vernon, Ind.		May 21
Jun. 1.	Sewer, Woonsocket, R. I.		May 21
	Advertised, Eng. News, May 21 and 28.		
Jun. 1.	Bridge, Mississippi City, Miss.		May 21
Jun. 1.	Bridge, Chehalis, Wash.		May 21
Jun. 1.	Bridge, Hay, Ont.		May 21
Jun. 1.	Electric light plant, Fertile, Minn.		May 21
Jun. 1.	Street lighting, Corry, Pa.		May 7
	Advertised, Engineering News, May 7.		
Jun. 1.	Street lighting, Frederickton, N. B.		May 21
Jun. 1.	Building, Newberry, S. C.		May 21
Jun. 2.	Paving, Versailles, Ind.		May 21
Jun. 2.	Roads, Princeton, Ind.		May 21
Jun. 2.	Bridge, Quincy, Fla.		May 21
Jun. 2.	Riveted pipe, etc., Richmond, Va.		May 21
	Advertised, Engineering News, May 21.		
Jun. 2.	Vessel repairs, New York, N. Y.		May 21
Jun. 2.	Building, Danville, Ill.		May 14
Jun. 2.	Paving, Fort Monroe, Va.		May 14
Jun. 2.	Building, Hamburg, Ark.		May 14
Jun. 2.	Gravel road, Bluffton, Ind.		May 14
Jun. 2.	Bridge, Red Lodge, Mont.		May 14
Jun. 2.	Electric light plant, Pueblo, Colo.		May 14
Jun. 2.	Street railway, Columbus, O.		May 14
	Advertised, Eng.. News, May 14 and 21.		
Jun. 2.	Street sweeping machine, Allentown, Pa.		May 28
Jun. 2.	Hydrants, New York, N. Y.		May 28
Jun. 2.	Water-works improvem'ts, Eveleth, Minn.		May 28
Jun. 2.	Flume line (W.-W.), Durango, Colo.		May 28
Jun. 2.	Bridge, San Jose, Cal.		May 28
Jun. 2.	Building, San Francisco, Cal.		May 28
Jun. 2.	Water-works, etc., Springfield, S. Dak.		May 28
Jun. 2.	Bridge work, Madison, Ind.		May 28
Jun. 3.	Building, Fort Snelling, Minn.		May 28
Jun. 3.	Building, Springfield, O.		May 14
Jun. 3.	Bridge, Oak Ridge, La.		May 14
Jun. 3.	Pile revetment, Milwaukee, Wis.		May 7
	Advertised, Eng. News, May 7 to June 4.		
Jun. 3.	Canal work, Newport, R. I.		May 21
Jun. 4.	Roads, Paoli, Ind.		May 21
Jun. 4.	Sewers, Ansonia, O.		May 21
	Advertised, Eng. News, May 21 and 28.		
Jun. 4.	Water gates, etc., Yonkers, N. Y.		May 21
	Advertised, Engineering News, May 21.		
Jun. 4.	Bridge, Fort Benton, Mont.		May 21
Jun. 4.	Light-house, Baltimore, Md.		May 7
	Advertised, Engineering News, May 7.		
Jun. 4.	Building, Scranton, Pa.		Apr. 30
	Advertised, Eng. News, Apr. 30 and May 7.		
Jun. 4.	Building, San Francisco, Cal.		May 14
Jun. 4.	Sewer, Boston, Mass.		May 28
Jun. 4.	Building, Big Lake, Minn.		May 28
Jun. 4.	Filter controllers, New York, N. Y.		May 28
Jun. 4.	Dredging, Boston, Mass.		May 28
	Advertised, Eng. News, May 28.		
Jun. 5.	Stone arches, London, O.		May 28
Jun. 5.	Bridge, Covington, Ind.		May 21
Jun. 5.	Paving, Traverse City, Mich.		May 28
Jun. 5.	Paving, New Brighton, N. Y.		May 28
Jun. 5.	Steel hull, Grand Rapids, Mich.		May 7
	Advertised, Eng. News, May 7 to June 4.		
Jun. 5.	Building, Mountain Lake, Minn.		May 21
Jun. 5.	Bridge, Grand Rapids, Mich.		May 21
	Advertised, Engineering News, May 21.		
Jun. 6.	Building, Charlestown, S. C.		May 21
Jun. 6.	Concrete walks, Fort Mott, N. J.		May 21
Jun. 6.	Bridge, Oroville, Cal.		May 21
Jun. 6.	Sewer system, Washington, D. C.		Apr. 23
	Advertised, Eng. News, Apr. 23 to May 14.		
Jun. 6.	Electric l't system, Ft. Leavenworth, Kan.		May 14
Jun. 6.	Cast-iron pipe, Washington, D. C.		May 14
	Advertised, Eng. News, May 14 to June 4.		
Jun. 6.	Sewer, Youngstown, O.		May 28
Jun. 6.	Road, Portland, Me.		May 28
Jun. 6.	Levee, Covington, Ind.		May 28
Jun. 6.	Bridge work, Bryan, O.		May 28
Jun. 6.	Bridge work, Wichita, Kan.		May 28
Jun. 6.	Iron flagstaffs (12), St. Louis, Mo.		May 28
Jun. 6.	Building, Washington, D. C.		May 28
Jun. 6.	Sewer, Wapakoneta, O.		May 28
Jun. 8.	Storage reservoir, Bozemont, Mont.		May 14
	Advertised, Eng.. News, May 14 and 21.		
Jun. 8.	Pumping engine, etc. Lancaster, Pa.		May 14
	Advertised, Eng.. News, May 14 and 21.		
Jun. 8.	Barracks, Alaska (U. S. Poss.)		Apr. 23
Jun. 8.	Defense towers, Portland, Ore.		Apr. 30
	Advertised, Eng. News, Apr. 30 to May 21-June 4.		
Jun. 8.	Building, Cleveland, O.		Apr. 30
	Advertised, Eng. News, Apr. 30 and May 7.		
Jun. 8.	Sewers, Ridgefield Park, N. J.		May 21
	Advertised, Eng. News, May 21 and 28.		
Jun. 8.	Macadamizing, Steubenville, O.		May 21
Jun. 8.	Roads, Albany, N. Y.		May 21
	Advertised. Eng. News, May 21 to Jun. 4.		
Jun. 8.	Sewer, Millburn, N. J.		May 21
	Advertised, Eng. News, May 21 to Jun. 11.		
Jun. 8.	Road (12 miles), Mt. Holly, N. J.		May 21
	Advertised, Eng. News, May 21 to Jun. 11.		
Jun. 8.	Electric light plant, New Orleans, La.		May 21
	Advertised, Eng. News, May 21 and 28.		
Jun. 8.	Storage reservoir, Bozeman, Mont.		May 21
	Advertised, Engineering News, May 21.		
Jun. 8.	Pumping plant, etc., Schenectady, N. Y.		May 21
	Advertised, Eng. News, May 21 and 28.		
Jun. 8.	Electric light plant, Greene, N. Y.		May 28
	Advertised, Eng. News, May 28 and June 4.		
Jun. 8.	Sewer, Millburn, N. J.		May 28
Jun. 8.	Building, Prescott, Ariz.		May 28
	Advertised, Eng. News, May 28 and June 4.		
Jun. 8.	Building, Winnemucca, Nev.		May 28
Jun. 9.	Water tower, Sacramento, Cal.		May 28
Jun. 9.	Naval supplies, Washington, D. C.		May 28
Jun. 9.	Sewers, St. Louis, Mo.		May 28
Jun. 9.	Sewer, Bound Brook, N. J.		May 28
Jun. 9.	Building, Denison, Ia.		May 28
Jun. 9.	Building, Brooklyn, N. Y.		May 28

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

Jun. 9. Paving, Binghamton, N. Y. ..... May 28
Advertised, Eng. News, May 28 and June 4.
Jun. 9. Building, Cleveland, O. ..... May 28
Jun. 9. Paving, Ashland, Wis. ..... May 21
Jun. 9. Water-works improvement, Ilion, N. Y. ... May 21
Jun. 9. Alterations, St. Paul, Minn. ..... Apr. 30
Advertised, Eng. News, Apr. 30 and May 7.
Jun. 9. Training wall, St. Augustine, Fla. ..... May 14
Advertised, Eng. News, May 14 to June 11.
Jun. 9. Paving, Steubenville, O. ..... May 14
Jun. 10. Bridge, Terre Haute, Ind. ..... May 14
Advertised, Eng,. News, May 14 and 21.
Jun 10. Macadamizing, Bowling Green, O. ..... May 14
Jun. 10. Pile dock, New York, N. Y. ..... May 14
Advertised, Eng. News, May 14 to Jun. 11.
Jun. 10. Water-works, Dillon, Mont. ..... May 21
Advertised, Eng. News, May 21 to Jun. 11.
Jun. 10. Bridges (2), Rushville, Ind. ..... May 21
Jun. 10. Sewers, Pine Bluff, Ark. ..... May 28
Jun. 10. Sewers, Hoboken, N. J. ..... May 28
Jun. 10. Paving materials, Washington, D. C. ..... May 28
Advertised, Eng. News, May 28 and June 4.
Jun. 10. Building, Bricelyn, Minn. ..... May 28
Jun. 10. Pump house, pipe, etc., Meadville, Pa. ... May 28
Advertised, Eng. News, May 28.
Jun. 11. Paving, Newark, N. J. ..... May 28
Advertised, Eng. News, May 28 and June 4.
Jun. 11. Bridge, South Bend, Ind. ..... May 21
Jun. 11. Barges (4), New Orleans, La. ..... May 21
Jun. 11. Building, Paducah, Ky. ..... May 14
Jun. 12. Removing wrecks (U.S. Poss.), Cuba ..... May 7
Jun. 12. Fireproofing, etc., Augusta, Ga. ..... May 21
Jun. 12. Grading and draining, Wauseon, O. ..... May 21
Jun. 12. Building, Frankfort, Pa. ..... May 21
Jun. 12. Sewer system, Lawrence, Kan. ..... May 21
Jun. 12. Building, New York, N. Y. ..... May 28
Jun. 12. Paving, Bridgeport, Conn. ..... May 28
Advertised, Eng. News, May 28 to June 11.
Jun. 12. Bridges, Belleville, Ont. ..... May 28
Jun. 12. Ammunition hoists (7), Boston, Mass. ..... May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 13. Water-works bonds, Clayton, Ala. ..... May 21
Advertised, Eng. News, May 21 to Jun. 18.
Jun. 13. Paving, Celina, O. ..... May 28
Jun. 13. Bridge, Cincinnati, O. ..... May 28
Jun. 13. Railway materials, Siam ..... Feb. 5
Jun. 15. Breakwater, Manila, P. I. ..... Mar. 12
Advertised, Eng. News, Mar. 12 to May 14.
Jun. 15. Railway material (foreign), Siam ..... May 14
Jun. 15. Building, Beaumont, Tex. ..... May 21
Jun. 15. Bridge, Holston, Va. ..... May 28
Jun. 15. Garbage crematory, Shreveport, La. ..... May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 15. Dredging, Norfolk, Va. ..... May 28
Advertised, Eng. News, May 28 and June 4.
Jun. 15. Hydrants, etc., Great Falls, Mont. ..... May 28
Advertised, Eng. News, May 28.
Jun. 15. Road, Neptune, N. J. ..... May 28
Jun. 15. Building, Burlington, Vt. ..... May 28
Advertised, Eng. News, May 28 to June 11.
Jun. 15. Building, Houston, Tex. ..... May 28
Jun. 15. Building, Danville, Ill. ..... May 28
Jun. 15. Building, Dunkerton, Ia. ..... May 28
Jun. 15. Post exchange, Salt Lake City, Utah ..... May 28
Advertised, Engineering News, May 28.
Jun. 16. Building, Two Harbors, Minn. ..... May 28
Advertised, Eng. News, May 28.
Jun. 16. Bridge work, Hillsboro, N. Dak. ..... May 28
Jun. 16. Paving, Rensselaer, N. Y. ..... May 28
Advertised, Engineering News, May 28.
Jun. 16. Building, Alexandria, Va. ..... May 21
Jun. 16. Building, Los Angeles, Cal. ..... May 21
Jun. 17. Pier construction, Grand Rapids, Mich. ... May 21
Advertised, Eng. News, May 21 to Jun. 18.
Jun. 18. Building, Boone, Ia. ..... May 21
Advertised, Eng. News, May 21 and 28.
Jun. 18. Street lighting, Portland, Ore. ..... Apr. 23
Jun. 18. Building, Salt Lake City, Utah ..... May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 18. Bridges, Shreveport, La. ..... May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 20. Bridge, Marion, Ind. ..... May 28
Jun. 20. Sewers, Washington, D. C. ..... May 14
Advertised, Eng. News, May 14 to Jun. 11.
Jun. 21. Building, Salem, Ore. ..... May 21
Jun. 22. Breakwater extens'n, New London, Conn. . May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 22. Dredging, Baltimore, Md. ..... May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 24. Extend'g breakwater, Grand Rapids, Mich. . May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 24. Light-house supplies, Tompkinsville, N Y. . May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 25. Building, Leadville, Colo. ..... May 21
Advertised, Eng. News, May 21 and 28.
Jun. 26. Light station, Mobile, Ala. ..... May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 26. Paving, Shreveport, La. ..... May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 26. Sewers, Shreveport, La. ..... May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 30. Dredges, Philadelphia, Pa. ..... May 14
Advertised, May 14, 21, and Jun. 11, 18.
Jun. 30. Railway (foreign), Spain. ..... May 14
Jun. 30. Fencing, Gettysburg, Pa. ..... Apr. 16
Jun. 30. River work, New Orleans, La. ..... May 7
Advertised, Eng. News, May 7, June 18, 25.
July 1. Electric lighting, etc., Rangoon, India .... Feb. 5
July 1. Railway, Argentina (Foreign) ..... Apr. 23
July 1. Building, Carnesville, Ga. ..... May 28
July 13. Bridge, Ellendale, Wash. ..... May 28
July 13. Building, La Grange, Ga. ..... May 7
May 2, '04. Railway, South Australia ..... Feb. 5
No date. Street cars, Jacksonville, Fla. ..... May 14
Advertised, Eng,. News, May 14 and 21.
No date. Electric equipment, Caledonia, Minn. ..... May 21
Advertised, Eng. News, May 21 and 28.
" . Water tower, etc., Lancaster, Ky. ..... May 21
Advertised, Engineering News, May 21.

RAILWAYS.

ALLEGHENY & WESTERN CONNECTING.—Reported that this road will be built through the coal lands to be opened up by the Indianola Coal Co. north of Harmarville, on the Allegheny, connecting with the P. & W. at Valencia, Pa. Contracts for the first five miles reported about to be made; rails purchased from Carnegie Steel Co.

ARKANSAS SOUTHERN.—A surveying party will take the field about June 1; only a reconnoissance from Winfield to Alexandria made to date; length, about 50 miles. Hugh C. Brown, Vice-Pres., Ruston, La., should be addressed for information relative to contracts. A. L. Bowen, Ruston, is Ch. Engr.; G. W. Hunter, St. Louis, Mo., is Pres. and Treas.

BALTIMORE & OHIO.—A connecting line is said to have been decided upon between the Belington, W. Va., branch and the Buckhannon on the line from Weston to Pickens, W. Va., about 12 miles distant. W. L. Deer is Acting Ch. Engr., 21 Cortlandt St., New York.

BANGOR & AROOSTOOK.—Extension reported likely from the Katahdin Iron Works, in Maine, to Chesuncook Lake, penetrating the woods. The line will be used for logging, and be 50 miles long. Moses Burpee is Ch. Engr., Houlton, Me.

BAY OF QUINTE RY.—Construction started on the extension from Tweed to Bannockburn, Ont., by McCoy & Wilfrid, who have first 12 miles under contract.

BLACKSTONE & SOUTHERN.—T. M. T. McKennan, Ch. Engr., Blackstone, Va., informs us that the location on 40 miles of this road was finished in February and the location from Blackstone to McKenny will be finished within a week. Bonds have been placed, but contracts are not yet let. Some work has been completed and some track laid to connect with the N. & W. at Blackstone. A contracting firm now has the construction under consideration. Line will be 60 miles long.

BROCK R. R.—M. S. Kline, Pres., Ridgeway, Pa., informs us that surveys are partly made and part of the right of way and capital for construction secured. Contracts will be let as soon as these last two matters are cleared up. About one mile is already built. Line will be 2½ miles long. J. L. Hirst, Ridgeway, is Ch. Engr.

CANADIAN PACIFIC.—Company will build a spur 6,200 ft. long to the Morrison mine in Deadwood camp, B. C.

CENTRAL PACIFIC.—Company has asked for franchise to construct track along Lindsay St., Stockton, Cal.

CHICAGO & NORTHWESTERN.—Company has accepted the ordinance for track elevation in Chicago and will, at a cost of $1,200,000, elevate the remainder of its tracks in that city. Subways will be put in several streets. E. C. Carter is Ch. Engr., Chicago.

CHICAGO, ROCK ISLAND & PACIFIC.—Surveyors are in the field locating an extension of the Graham branch to a connection with the Choctaw Division in Texas, a distance of 200 miles. J. F. Stevens is Ch. Engr., Chicago.

DENVER, YANKEE HILL & WESTERN.—R. A. Hall, Box 692, Denver, Colo., who is acting as chief negineer, informs us that he has secured the contract for building this line, but will sublet it. A preliminary survey has been made. Line will be 15 miles long. It will touch Central City, Russell Gulch, Peck Flats and Glacier. John C. McShane, Central City, Colo., is Pres.

ELKINS & HUNTSVILLE CENTRAL.—F. M. Billings, Fayetteville, Ark., writes us that this road is not planned or considered, but is the outcome of a student survey by the engineering students of the University of Arkansas. No construction will take place.

EL PASO & SOUTHWESTERN.—H. J. Simmons, Ch. Engr., El Paso, Tex., writes us that Orman & Crook, Pueblo, Colo., have the contract for the line from Naco to Lewis Springs and Naco to Forrest, about 40 miles, and are now at work. This will be built to secure a maximum grade of 1% between Lewis Springs and Forrest, instead of 2½%, as at present. Work will be completed by Nov. 1.

GULF, CALCASIEU & NORTHERN.—Shutts & Duller, Lake Charles, La., are the chief engineers for this road. F. Shutts, Locating Engr., expects to finish the first preliminary line from Lake Charles to Natchitoches, La., by May 26.

KENT NORTHERN.—Gilmour Brown, C. E., Fredericton, N. B., is at work on the extension from Kent Junction to Chipman, some 42 miles; also on the Beersville road, which will run from Adamsville, N. B., to the property of the Imperial Coal Co.

LOUISVILLE & NASHVILLE.—Reports state that the Shawneetown branch will be extended from Providence to Sturgis, Ky., on the Ohio River. W. H. Courtenay is Prin. Asst. Engr., Louisville, Ky.

LOUISVILLE & NASHVILLE.—H. Mason, Frankfort, Ky., who has contracts for driving tunnel on the branch road from Altoona to Attalla, is closing up contracts for his equipment, preparatory to beginning work.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—It is said that work will commence immediately on the branch line from Glenwood to Detroit, Mich., to be about 125 miles long. Thos. Green is Ch. Engr., Minneapolis, Minn.

NEBRASKA, KANSAS & GULF.—We are informed that this line is permanently located from Concordia to Newton, and that the right of way is secured between these points. Work on the balance is under way. Line will be 410 miles long, and run from Concordia to Minneapolis, Saline, Newton, Wichita and Arkansas City, Kan. The Federal Construction Co., Kansas City, Mo., has the general contract and is now subletting the work that is ready. Following counties are voting bonds to aid construction: Republic, $50,000; Cloud, $52,000; Ottawa, $50,000; Saline, $50,000; McPherson, $50,000; Harvey, $44,000; Sedgwick, $110,000, and Arkansas City, $50,000. H. F. Redding, Kansas City, Mo., is Pres., and J. O. Reddig, Salina, Kan., is Ch. Engr.

NORTHERN PACIFIC.—A 3,700-ft. siding has been staked out at Big Timber, Mont., and the work of grading and track laying will commence at once. The yard at Columbus will also be enlarged. B. E. Palmer is Div. Engr., Livingston, Mont.

PENNSYLVANIA R. R.—A statement to the effect that the company plans improvements such as will practically duplicate the present system is credited to A. J. Cassatt, Pres.——Land tracts are being secured from Harrisburg to Marysville, which will be used for freight yards.

ST. ANDREWS, QUINCY & NORTHERN.—A bill has passed the house of representatives of Florida which provides for the construction of this road, carrying with it a land grant of 5,000 acres of land for every mile constructed. The company has two years in which to begin work and two additional years for completing the first ten miles. It will traverse a part of Florida which is now a wilderness.

SANTA CRUZ, CAPITOLA & WATSONVILLE.—This Los Angeles, Cal., company has been authorized to issue $100,000 in bonds to complete the construction and equipment of the road.

SOUTHERN.—W. H. Wells, Ch. Engr. Construction, Washington, D. C., informs us that a corps of engineers is at work on the survey of the line from Maryville, Tenn., to Bushnell, N. C., but it is not decided to ask for bids as recently stated, or even assured that the line will be built.

UNION PACIFIC.—A contract has been let to Kilpatrick Bros. & Collins, Denver, Colo., for double tracking the line from Kearney, Neb., to Silver Creek, about 60 miles. It will cost about $2,000,000. Sub-contractors Flaherty, Blair and Atkinson, of Denver, will probably handle portions of the work.

WESTERN PACIFIC.—W. J. Bartnett, of San Francisco, Cal., states that construction will be taken up and pushed as rapidly as possible. Chief Engineer Dillman is now working on the surveys. The route from Oroville, where Mr. Dillman is now operating, to the Nevada state line, is determined, but not between Oroville and Stockton. Engineer Reddie of Quincy has the survey of the Oroville-Nevada state line in charge, and Engineer Rogers is supervising the Oroville-Stockton survey.

WISCONSIN.—City Engineer Poetsch, of Milwaukee, has completed the new plan and ordinance for the south side track elevation.

WRIGHTSVILLE & TENNILLE.—An extension to Americus, Ga., via Vienna, is talked of. A. F. Daley is Pres., Tennille, Ga.

NEW INCORPORATIONS AND CHARTERS.

COLORADO, OKLAHOMA & TEXAS.—Okla.—Amended articles filed in Guthrie providing for the extension of the proposed route to a total distance of 600 miles from Puebla to Denison, Tex.; capital, $2,000,000. E. E. Colby, Springfield, Mo.; S. G. F. Morse, Cleveland, and Frank Irionids, Fort Smith, Ark., are incorporators.

FLINT RIVER & NORTHEASTERN.—Ga.—To run from a point on the west bank of the Flint River to Pelham, with branches to Hartsfield and Carlisle; capital $100,000; office in Pelham.

NORTHERN CENTRAL CONNECTING.—Pa.—Chartered to build a cut-off connecting the Northern Central with the Pennsylvania for the transportation of freight to the new Enola yards at Harrisburg, Pa. Line will be about 35 miles long.

REES & KRAUSE CO.—Ore.—Incorporated with $40,000 capital; will build logging road from point on Coal Creek, Cowlitz county, Wash.; T. G. Rees, Chas. J. Schnabel and Theo. Krause are interested.

ST. LOUIS & ST. PAUL.—Mo.—Chartered to build a line through Scott, Knox, Shelby, Monroe and Audrain counties, 150 miles in length; capital, $1,000,000. S. F. Scott, W. C. Picking and A. C. Kinnead, Kansas City, are incorporators.

SAN FRANCISCO & EUREKA.—Cal.—Line to be an extension of the California Northwestern to Eureka north from Willits; capital, $10,000,000; A. W. Foster, John P. Overton and Geo. A. Pope are interested.

SAN PEDRO, TUCSON & GULF.—Ariz.—Will build from Grant's Wash in Pinal county to a point on Phoenix & Eastend, and extend into Sonora, Mex. N. O. Murphy, Burton C. Mossman and R. W. Craig, Phoenix, interested.

TOMBIGBEE RIVER.—Ala.—Application made for charter; capital, $2,000,000; will build from Aberdeen, Miss., to Linden, Ala., 150 miles, later to be extended to Pensacola, Fla., 315 miles. Construction to commence in June. Enos R. Stewart, Selma; John A. Rogers, Gainesville, Ga., and F. P. Jenkins, Aberdeen, Miss., are incorporators.

WASHINGTON RY.—Wash.—J. D. Atkinson and A. W. Frater incorporators; capital, $1,000,000; will build from Orondo on the Columbia River via Waterville through the Big Bend country; 30 miles surveyed; finances reported arranged for early construction.

STREET AND ELECTRIC RAILWAYS.

AUGUSTA, ME.—Caribou, Washburn & Perham Electric Ry. incorporated to run from Caribou to Perham, 15 miles; capital, $210,000. S. D. White, J. D. Emery and H. A. P. Edwards are directors.

CALAIS, ME.—Local men have formed a company for building an electric railway from this place to Robbinston, 12 miles, down the St. Croix River. The Calais & St. Stephen R. R. Co., which had the right to build over the road proposed, forfeited its claim to the same.

BIDDEFORD, ME.—Governor Hill has advised the residents of Berwick and Somersworth that the South Berwick, Elliot & York electric road would be extended to Berwick as soon as possible.

WINDSOR LOCKS, CONN.—The Windsor Locks & Rainbow St. Ry. Co. has been authorized to increase its capital stock from $100,000 to $300,000. Company will build a continuous trolley line between Hartford and Springfield.

HARTFORD, CONN.—The General Assembly has acted favorably on the resolutions to incorporate the Woodbury & Waterbury St. Ry. Co. and the Plainville & Farmington Tramway Co. The latter is capitalized at $500,000 and will construct tracks in Farmington and Plainville. James T. Patterson, J. B. Cornwall and Arthur Perkins are incorporators. The committee also reported favorably on resolutions extending the time for the construction of the Hartford & Middletown St. Ry. and certain lines of the Stamford St. Ry. The senate passed a resolution incorporating the Voluntown & Jewett St. Ry. Co. and authorizing the Stafford Springs St. Ry. Co. to make various extensions.

ROCKVILLE, CONN.—Frank Grant, Pres. Rockville, Broad Brook & East Windsor St. Ry., writes that the company was organized and officers elected on May 12. Contract for the survey not yet placed. Line will touch Vernon, Ellington, Broad Brook and East Windsor, 11 miles.

ALBANY, N. Y.—Amityville & Huntington R. R. incorporated to build electric road between points named, 14 miles; capital, $250,000; W. K. Putnam, A. S. Sanborn and C. B. Smith are directors.

WHITESTONE (L. I.), N. Y.—Citizens' committee has petitioned for approval of the formation of the Bayside & North Shore Electric Traction Co., which proposes to connect the old towns of Whitestone, Bayside, Flushing and Jamaica (now in Greater New York) with a trolley system. C. M. Emery, New York; A. E. Levy, Syracuse, and Osgood Haverly, Buffalo, are interested.

ELIZABETH, N. J.—Council has granted permission to Essex-Cross Traction Co. to extend its line from Union and Morris Aves. to Broad St.

MECHANICSBURG, PA.—Grading on the Harrisburg & Lewisburg St. Ry. is now under way; length, 9 miles; new power house to be built. W. H. Smith is interested.

PITTSBURG, PA.—Porter & Porter Co. are reported to be back of a new project, the Erie, Cambridge, Union & Erie Ry. Co., which has for its purpose the construction of a 42-mile interurban electric road touching those and other cities. Estimate of cost of construction by Axel H. Engstrom, Engr., Philadelphia, $800,000. Company was chartered in 1901 with $1,000,000 capital.

WILMINGTON, DEL.—The Delaware Suburban Ry. Co. has been granted a franchise to build a line on Banning St. Company will build a road to Elkton, Md. H. R. Fothergill is Mgr.

ROANOKE, VA.—C. R. Brinton, Pittsburg, Pres. U. S. Arsenic Mines Co., states that it is decided to build the electric road from Shawsville, on the N. & W., to the company's mines near Simpson's P. O., 15 miles, and that the contract has already been placed. The power will be obtained from the Roanoke River.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

NEWPORT NEWS, VA.—The stockholders of the Hampton Roads Ry. have authorized the issue of $300,000 in bonds to provide for extensions and improvements. Work will be started without delay. J. A. Vander is Pur. Agt., Philadelphia, Pa.

NEW MARTINSVILLE, W. VA.—The Tennis Co., of Cincinnati, O., which has the contract for a 12-mile electric road for the Taylor Ry. Co., will start work at once. Line will run from Sistersville to New Martinsville.

GREENVILLE, S. C.—Electric Interurban railway proposed between Greenville and Anderson, 35 miles. Geo. E. Coughlin, Indianapolis, Ind., and other capitalists are promoting it. It is probable that the line will be built during the year. E. Sirrine, C. E., of Greenville, is to make the survey.

COLUMBIA, S. C.—The Columbia Electric St. Ry., Light & Power Co. has completed arrangements for issuing $1,000,000 in bonds for purchasing better equipment and other purposes. E. B. Clark is Mgr.——The Augusta-Columbia electric line has been surveyed to Aiken for 30 miles from this city.

ATLANTA, GA.—The Piedmont Electric Ry. Co. has applied for a charter with $500,000 capital. Company will use principal streets of Atlanta. E. S. Brazleton, Birmingham, Ala.; C. E. Kingsbury and P. J. Hightower, Atlanta, are interested.

SCRANTON, MISS.—S. S. Bush, Gen. Mgr. Pascagoula St. Ry. & Power Co., writes that one-half of the track is laid, power house under roof, and cars will be put in operation by Aug. 1. Road will be 10 miles long and used for freight and passenger traffic. Company also supplies power for water-works, ice plant, 30 tons a day, and for 3,500-light lighting plant. Samuel Young is Ch. Engr.

GLASGOW, KY.—The Glasgow, Burkesville & Cumberland Valley Traction Co. incorporated; capital $500,000, will build an electric road from this place via Edmonton to Burkesville and probably to some point in Tennessee.

YOUNGSTOWN, O.—The contract for the first 15 miles of the Youngstown & Southern Ry. was to have been let May 26. Company's offices are on Central Square, City. R. L. Andrews is Gen. Mgr. and George Tod, Ch. Engr.

CRAWFORDSVILLE, IND.—The Consolidated Traction Co. has received a franchise for a system of electric railways in this city. Edward Hawkins, Indianapolis, is at the head of the company.

DAYTON, O.—Interstate Traction Ry. Co. incorporated; capital, $100,000; line will run from Dayton to Indianapolis, through Montgomery and Preble counties in Ohio, and Union, Fayette, Rush, Shelby, Hancock and Marion counties in Indiana. Geo. W. Woodman, D. M. Sanger and E. R. Phillips are incorporators.——The Union Traction Co. is planning a new union station at Dayton and other improvements which, together with a cold storage plant by the Ohio Cold Storage Co., will aggregate a cost of nearly $10,000,000.

MARIETTA, O.—T. M. Ripley has completed the survey for the Marietta-Barnesville electric railway. Work on right of way to start. Road will cost about $800,000.

INDIANAPOLIS, IND.—Townsend, Reed & Co., builders of the Indianapolis & Northwestern Electric Ry., have sublet the grading of 24 miles between Lebanon and Crawfordsville to Clift Wise, contractor, of Chicago.——Fletcher Hines and Dr. R. C. Light have purchased the Indianapolis, Shelbyville & Southeastern Traction Co. Road is now operating between here and Shelbyville, and arrangements have been made for continuation of line to Greensburg and Cincinnati. The new owners will reorganize the company.

BATTLE CREEK, MICH.—A. J. White stated that the Michigan Central Traction Co. has sold $1,000,000 in bonds and has contracted for 25 miles of its road. Work has probably commenced by this date.

SPRINGFIELD, ILL.—The Southern Illinois Electric Ry. Co. has incorporated to build a road from East St. Louis through St. Clair, Clinton, Washington, Marion, Jefferson, Hamilton and White counties to near Maunee; John R. Piercy, Louis G. Pavey and Albert N. Johnson, Mount Vernon, are directors.——The Springfield, Noweaque, Sullivan & Mattoon R. R. Co. incorporated; line between points named. S. W. Wright, Jr., Sullivan, Ill.; Isaac B. Craig, Mattoon, Ill.; and Ira T. Baird, Prairie Home, Ill., are directors.

DES MOINES, IA.—The Western Iowa Interurban Co. has organized with $1,000,000 capital to build an electric line between this city and Council Bluffs. E. W. Weeks, Guthrie Center; H. H. Polk, Des Moines; J. A. Nash, Audubon, are directors.

MUSCATINE, IA.—A contract has been made with the International Construction Co., of Detroit, Mich., for building the Davenport-Muscatine interurban line; line about 40 miles; cost, about $800,000.

SIOUX CITY, IA.—A franchise has been asked by Geo. E. Ward for an electric railway from Sioux City to Spirit Lake, via Alton, Hartley, Sheldon, Spencer and Sanborn.

NEBRASKA CITY, NEB.—John C. Watson, Secy. Nebraska City St. Ry. Co., writes us that the company is desirous of disposing of $100,000 of its bonds, which have been authorized to provide for the conversion of the present horse-car system to an electric system, and the company will entertain offers from parties who can negotiate to that end.

DEADWOOD, S. DAK.—E. J. Robinson of the Black Hills Engineering Co., Deadwood, advises us that E. L. Woolley, of that firm, is Ch. Engr. Black Hills & Spearfish Valley Electric Ry., and has located that line. No contracts have been let as yet, but construction will follow as soon as the necessary financial arrangements are perfected. Line will be 14 miles long. Deadwood, Centennial and Shearfish are on the route. Milton C. Connors is Pres., Spearfish, S. Dak.

COLUMBIA, MO.—Bids are wanted by the Missouri Central R. R. Co., 68 Wall St., New York, on 200 miles of railway construction, including masonry, grading, bridge work, etc. Wm. B. Cauthorn, Ch. Engr., of Glasgow and Columbia, writes us that 194 miles of this 200-mile electric road have been located and details worked out; 90% of the right of way is secured; $4,000,000 in bonds underwritten. Mr. Cauthorn states that the rolling stock and machinery are now being purchased. The road will have standard grades and curvature and will haul heavy freight. It will run through a number of prominent towns, and through a 30-mile coal belt. Geo. B. Harrison is Pres., Glasgow, Mo.; W. H. Chase, New York, is the promoter.

JEFFERSON CITY, MO.—Charter secured by the St. Joseph, Parkville & Kansas City Ry. Co., capital, $5,000,000. Company will build an electric road from St. Joseph, Mo., to Kansas City, via Atchison and Leavenworth, Kan. J. J. Tootle, St. Joseph; J. L. Brown, Kansas City; E. B. Snider, Leavenworth, and H. B. McAfee, Parkville, are interested.

ST. LOUIS, MO.—The St. Louis Transit Co. has contracted with the Westinghouse Traction Brake Co. for the equipment of all its cars with power brakes; about 2,000 cars will be equipped.——The Illinois Transit Co. incorporated with $1,000,000 capital, to build an electric road from Bellville to East St. Louis. Dr. B. H. Portmondo, Bellville, and L. G. McNair, and F. R. Harris, St. Louis, are interested.

LITTLE ROCK, ARK.—Charter granted Batesville & Jacksonport Ry. which will parallel the Iron Mountain road and run for about 22 miles. E. R. Butler, Batesville; S. R. Phillips, Newport, and Arthur Neill, Little Rock, are interested.

GLEN ROSE, TEX.—Dr. Gaither, of Glen Rose, writes us that the road of the Granbury & Glen Rose Traction Co. will not be built if Oklahoma & Texas Southern R. R. builds from Red River via Henrietta, Nocona, Jacksboro, Mineral Wells, Weatherford, Buckner, Granbury and Glen Rose south to deep water. Right of way for the electric line is partly secured; 18 miles is projected length.

SAN ANGELO, TEX.—A proposition has been offered to the business club of this place for building an electric railway from here via Christoval to El Dorado; estimated cost, $1,250,000.

OKLAHOMA CITY, OKLA.—The chamber of commerce has accepted the proposition of W. S. McCaul for a railway from Oklahoma City northwest to Kingfisher. The line will cost the city $20,000; work will likely commence soon.

SPOKANE, WASH.—Contract for grading the Spokane & Coeur d'Alene Electric Ry. let to M. D. Dwight and S. A. Eslick, both of Spokane, and to Porter Bros., also of this city, for the bridging. The contract calls for the completion of the work by Aug. 1. The overhead work will take about one month. F. A. Blackwell is Pres.——An electric railway will be built from Kettle Falls, three miles long to connect Grand Rapids by the Northwestern Irrigation & Power Co., of Seattle. An irrigation ditch, 27 miles long, to furnish water to 16,000 acres of land along the Columbia, it is said, will also be built by the same company.

TACOMA, WASH.—Council has granted E. J. Felt a franchise for a street railway in this city. He must begin work within six months and have road ready in two years.

LOS ANGELES, CAL.—Bids are called until June 15 for purchase of a street railway franchise applied for by L. C. Brand. H. J. Lelande, City Clk.

MARTINEZ, CAL.—Robt. N. Frick has asked supervisors for a franchise for an electric road from the line between Contra Costa and Alameda counties through Lafayette and Walnut Creek to Danville, thence to the top of Mt. Diablo; also to Martinez. Bids for franchise will be opened July 6.

OAKLAND, CAL.—Oakland Transit Co. has applied for permission to build various extensions. W. F. Kelly is Mgr.

SAN FRANCISCO, CAL.—Some power sites have been located and about $100,000 has been expended on preliminary details for the Yosemite Valley R. R. Co.'s electric line. Company was incorporated several months ago.

PHOENIX, ARIZ.—Plans are being made for an electric street car by J. B. Girand, representing Cataract Creek Power Co., who is making the survey; starting at terminus of steam road at Bright Angel, the line will run into Cataract Canyon and along Grand Canon of the Colorado. The power to be secured from falls in Cataract Creek.

TORONTO, ONT.—The bill incorporating the Kingston & Frontenac Ry. has passed the legislature. Work is to commence within three years and be finished within five years.

WINNIPEG, MAN.—A. Heathcote is at work on the survey for an electric line to Selkirk. Line will run to Winnipeg Beach. Work is to be finished by Nov. 15.

LIGHT, HEAT AND POWER PLANTS

MANCHESTER, MASS.—Surveys are being made for installation of conduits for wires for electric lighting system.

GREENE, N. Y.—Bids are asked until June 8 for constructing building and furnishing equipment for electric light plant. Edgar B. Kay, Ithaca, N. Y., Engr.; Meta L. Cowles, Clk. Bd. Trustees. (See advertising columns.)

NEW YORK, N. Y.—The following bids were received by T. Norman, Q. M., Governor's Island, for electric lighting appliances: Weiderman & Conklin, 139 Gates Ave., Brooklyn, N. Y., $30,810; W. M. Sheehan, 136 Liberty St., New York, $27,533; O. K. Electric Construction Co., 727 Broadway, New York, $34,500; Edward Joy, Syracuse, N. Y., $58,000; Johnston, Lumgston, Jr., & Co., 13 Park Row, New York, $26,750.

NEW YORK, N. Y.—R. G. Monroe, Comr. Water Supply, Gas and Electricity, has submitted a report on a municipal plant to the Mayor, with the suggestion that new bids be asked for electric lighting.

ELMER, N. J.—We are informed that Howell & Co., Drexel Bldg., Philadelphia, who have a franchise for an electric plant here, will not call for bids, but will construct the plant themselves. It is to be operated by water power and is to be for lighting purposes only.

LAUREL SPRINGS, N. J.—New electric light plant for this place is contemplated by Laurel Springs Electric Light Co. R. T. Watt is interested.

SOUTH BETHLEHEM, PA.—Plans are being made for new gas plant for Consumers' Heat & Power Co., care J. M. Degnan, 3d and Locust Sts. Henry W. Benner, Bethlehem is Engr., and has charge of all equipment.

CENTERVILLE, MD.—Franchise for gas plant has been granted to John D. Thompson, Trenton, N. J.

HYATTSVILLE, MD.—Franchise will be granted to Northern Electric Lighting Co., New York, N. Y., to install electric light plant.

DARLINGTON, S. C.—Darlington Electric Light & Water Co. will spend $10,000 in improvements.

GENEVA, ALA.—City is to have electric lights and water-works at cost of $20,000. P. N. Hickman is Mayor.

MONTGOMERY, ALA.—$25,000 electric light plant to be erected by Alex. Rice and associates.

NEW DECATUR, ALA.—Local electric light and gas plants to be enlarged at cost of $50,000; ice and cold-storage plant will also be added.

SYLACAUGA, ALA.—We are informed that no steps have been taken as yet by Sylacauga Land & Improvement Co. for electric lights or water-works. T. V. Knight, Agt.

GLADSTONE, KY.—Reported that Gladstone Coal & Coal Co. will put in electric plant.

YOUNGSTOWN, O.—Stated that Hank Fuel Gas Co., Chas. D. Hank, Pres., Pittsburg, Pa., will install plant here to manufacture 2,000,000 cu. ft. of fuel gas per day.

INDIANAPOLIS, IND.—Stated that Indianapolis Gas Co. will spend $800,000 in improving its works. A new plant to make water gas from crude oil will be built.

LAFAYETTE, IND.—Contract for $25,000 heating plant for Purdue University was let to Adam Herzog & Son.

SOUTH BEND, IND.—Chas. A. Chapin, of the South Bend Mfg. Co., is said to have plans for modernizing the water power service of the west race so as to furnish electric power.

GRAND RAPIDS, MICH.—M. W. Hyde, Secy. Thornapple Electric Co., writes us that nothing has been done save to apply for a franchise. The proposed plant is to be located at Cascade and Grand Rapids and S. D. Koff, Hastings, Mich., is Des. Engr.

MARSEILLES, ILL.—The contract for excavating head and tail races and erection of two dams for the Marseilles Land & Water Power Co. has been let to Hayes Bros., Janesville, Wis.

ROCK FALLS, ILL.—Contract for constructing a dam across Rock River, 12 miles west of this city, has been let. The cost will be about $200,000, and the dam is to be constructed of steel and concrete. F. R. Rice is stated to have charge of the construction.

GRANTSBURG, WIS.—Town votes for plant.

LANCASTER, WIS.—John Schriner and others will put in new power plant.

SUPERIOR, WIS.—Stated that Northwestern Fuel Co. will construct plant to develop electric power from surplus heat of coke ovens.

WEST ALLIS, WIS.—Stated that the Northwestern Heat, Light & Power Co. will at once begin erection of its power and manufacturing plant.

AURELIA, IA.—Town will vote on franchises for gas lighting, heating and water-works.

UNION, IA.—Town considering electric light plant.

REDFIELD, IA.—We are informed that matter of building electric light plant here, to cost $6,000, is still in question. Robert Goodwin, Jr., Mayor.

PELICAN RAPIDS, MINN.—We are informed that bids will be received until June 1 for $10,000 electric light bonds, after which time advertisements for constructing the plant will be issued.

WICHITA, KAN.—We are informed under date of May 24 that S. L. Nelson, Fort Wayne, Ind., is receiving bids for 500 KW. 500-volt-generator and Corliss engine for electric plant of Wichita Railroad & Light Co.

HEBRON, NEB.—We are informed that the Hebron Light, Power & Heating Co., C. M. Wetherald, Pres., will probably buy material and equipment for plant and hire superintendent to construct it. They will probably want two 60-HP. boilers, a 75 to 90-HP. engine, a 700 to 800-light dynamo and about three miles No. 4 and 6 wire, and poles; also some water mains.

ST. LOUIS, MO.—Contract for laying about 100 miles of gas pipe for the Laclede Gas Light Co. has been let to the Abbot-Gamble Contracting Co., 32 Broadway, New York.

EMPIRE, COLO.—Proposed to erect dam on Clear Creek, five miles from town, for power and irrigation purposes. Mayor Clouch is interested.

BALLARD, WASH.—We are informed that plant of Ballard Electric Co. is to be increased by 800 HP. within a year for lighting and power purposes. The overhead distribution system will be employed.

SALEM, ORE.—J. H. Albert has franchise to erect electric light and power line on public roads between Salem and Mehana.

WOODBURN, ORE.—Aurora Electric Light & Power Co., Fred Hurst, Mgr., has applied for lighting franchise.

COLTON, CAL.—Plans for gas plant have been submitted to trustees by Geo. B. Ellis.

MARTINEZ, CAL.—Fifty-year franchise for pole line in Calaveras county has been granted to American River Electric Co.

PLACERVILLE, CAL.—American River Electric Co. proposes to build 10,000-HP. plant on Rock Creek and has already let contract for seven miles of ditch to San Francisco Construction Co.

PORTERVILLE, CAL.—Mt. Whitney Power Co., C. H. Holly, Ch. Engr., is to put up new sub-station here which will have a capacity of 350 KW.

REDLANDS, CAL.—Redlands Gas Co. will spend about $150,000 in constructing new mains and improving lighting system.

SALT LAKE CITY, UTAH.—Utah Light & Power Co. will build auxiliary steam power plant at Jordan Station at cost of about $150,000. Plant will have capacity of 1,500 KW.

SAN DIEGO, CAL.—Contract for electric power house at Fort Rosecrans let to Porter, Sloane & Porter, Los Angeles, Cal., for $28,000. Contract for electrical equipment let to Heilbron-Hubbard Electrical Co.

SANTA MARIA, CAL.—Franchise for 50-year term, for electric light and power system, granted to Reuben Hart.

SALT LAKE CITY, UTAH.—The Utah Light & Power Co. will install auxiliary steam plant of 2,000 HP. at Jorday station. The estimated cost of the work is $100,000. R. S. Campbell is Mgr.

SPANISH FORK, UTAH.—H. C. Jex writes us that surveys, etc., are to be completed this month for water-power plant in Spanish Fork Canyon, after which a company will be incorporated.

HONOLULU, H. I.—(See U. S. Possessions and Cuba.)

WHITBY, ONT.—Plans for electric light and water-works plant for this town have been made by R. E. Speakman, C. E., Toronto, Ont.

CALGARY, N. W. T.—Proposition for installing electric light and power plant here has been submitted by E. S. Harrison, Winnipeg, Man.

BONDS.—River Rouge, Mich., votes not to issue $20,000 municipal lighting plant bonds.——Pelican Rapids, Mich., will open bids June 1 for $10,000 electric light plant bonds.——Santa Ana, Cal., may vote on bond issue for municipal lighting plant.——South Stillwater, Minn., will sell $15,000 electric light and water bonds.——Grantsburg, Wis., votes $8,000 bonds for electric light plant.

NEW COMPANIES.—United States Light, Power & Traction Co., Albany, N. Y.; $500,000; J. Ashley M. Cole, Louis B. Grant, Joseph B. Mayer, 390 Ellicott Sq., Buffalo, N. Y.——New England Water Power Co., Raritan Landing, N. J.; $100,000; Adrian Varmeule, New Brunswick, N. J.; R. R. T. Rowe, Adrian Varmeule, Jr.——Manatee Light & Traction Co., Braidentown, Fla.; $100,000; John A. Graham, W. A. Carter.——Davenport Water Power Co., Davenport, Ill.; $10,000; Chas. E. Francis, E. H. Schmidt, Geo. Mengel.——American River Electric Co., San Francisco, Cal.; $2,500,000; H. H. Ferns, H. A.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

Cooke, San Francisco, Hugh Goodfelow, Oakland, Cal.——Steger Electrical Co., Fresno, Cal.; $10,000; Clark Steger.

BRIDGES

BANGOR, ME.—C. H. Coombs, Cy. Engr., has estimated cost of Lower Kenduskeag bridge at $80,000. It will not be built this year.

BATH, ME.—County commissioners have engaged Joseph R. Worcester, 53 State St., Boston, to make estimate of cost of rebuilding Merrymeeting Bay bridge.

WISCASSET, ME.—Lincoln county votes June 1 on acquirement of Wiscasset bridge. Present structure will need to be rebuilt at an estimated cost of $20,000. Bridge is of piles, 3,300 ft. long. W. G. Farley is President of company now owning bridge.

BOSTON, MASS.—Council loan bill contains orders for $56,000 for reconstruction of Congress St. and Mt. Washington Ave. bridges.

NORTH ADAMS, MASS.—The street railway company will erect a concrete steel arch bridge of 80 ft. span, at Braytonville. The cost will be about $10,000. F. B. Locke is Cy. Engr.

SPRINGFIELD, MASS.—The following bids were received for raising the Sound End bridge, the city's estimated cost of the work being $10,000; bids were asked on four propositions: Springfield Construction Co., (1) $15,600, (2) $17,500, (3) $14,500, (4) $15,500; 160 working days. John Donahue, (1) $15,200, (2) $16,000; 180 working days. Berlin Construction Co., Berlin, Conn., (1) $16,500; 130 working days. Norton Bridge Co., (1) $15,760, (2) $18,700; 200 working days. Chas. M. Slocum is Cy. Engr.

WESTPORT, MASS.—Committee, Wm. H. Gifford, member, has been appointed to get estimates of cost of new bridge and repairing of old bridge at Westport Point.

KINGSTON, R. I.—$75,000 iron bridge over the Wickford may be voted on.

WOONSOCKET, R. I.—Bids are asked until June 1 for building extension to Arch bridge on Elm St., over Peters River. F. H. Mills, Cy. Engr.; W. F. Fontaine, Chn. Bridge Com.

BRISTOL, CONN.—Special election to consider construction of new bridges over Pequebuch River to be held. P. H. Condon is Chn. Selectmen.

MECHANISVILLE, N. Y.—State appropriates $9,000 for overhead bridge betwen Francis St. and Burke Ave. over Champlain Canal.

NEW YORK, N. Y.—Erie R. R. proposes to build a bridge over West St. from its ferry house to a point between Chambers and Warren Sts.

SODUS, N. Y.—$5,000 appropriated by state for remodeling Sodus Bay bridge.

SYRACUSE, N. Y.—State has appropriated $9,500 as its share of bridge to be built at Willow St. $4,000 was also provided for widening James St. canal bridge.

CENTERTON, N. J.—New county drawbridge at this place reported; estimated cost $20,000.

PEMBERTON, N. J.—County commissioners allow $4,000 for new bridge at this place.

MAUCH CHUNK, PA.—Bids are asked until June 1 for building iron bridge over Quaker Creek in Pacher. David O. Strang, County Comr.

PHILADELPHIA, PA.—Philadelphia Rapid Transit Co. has let contract for building piers for double deck trolley bridge over Schuylkill River to Monk & Sons, 130 Water St., New York.

PHOENIXVILLE, PA.—The Montgomery & Chester Electric Ry. Co., care J. W. Gillette, is having plans made for a steel bridge at this place.

PITTSBURG, PA.—The county commissioners contemplate the erection of bridges near West Bellevue station to cost $20,000.

PITTSBURG, PA.—Bids will be opened May 29 for substructure and masonry of steel arch viaduct, four steel through plate girder bridges and five stone arch bridges. Chas. Davis, County Engr.; R. J. Cunningham, County Comptroller.

WASHINGTON, D. C.—Revised specifications for the proposed Potomac River highway bridge have been prepared by Lt.-Col. C. J. Allen, U. S. Engrs. Bids are to be asked for a bridge of steel truss structure, 2,666 ft. long between end piers, consisting of eleven fixed spans of 216 ft. each, from center to center of piers supported by 12 piers and two abutments of concrete and granite masonry ,all with concrete and pile foundations. Proposals for this work were opened March 27, but were found to exceed the appropriation of $996,000 available for the work and so were rejected.

HOLSTON, VA.—Bids are asked until June 15 for 220 ft. steel bridge over the Holston River. John C. Stanfield, County Supervisor.

CULLMAN, ALA.—Contract for bridge over Brogden River has ben let to B. Moore, Fontella, Ala., for $1,998; contract for bridge over Duck River let to Dock Thomas for $1,250.

SHREVEPORT, LA.—Bids are asked until June 18 for building wooden or steel bridges in Caddo Parish. P. P. Keith, Pres. (See advertising columns.)

BYRAN, O.—Bids are asked until June 6 for constructing substructure of stone or concrete for six bridges. Howard Friend, County Audr.

CINCINNATI, O.—Bids are asked until June 13 for constructing wrought iron truss bridge over east fork of Taylor Creek, Green Township. Eugene L. Lewis, County Audr.

CLEVELAND, O.—We are informed that bids will be received July 1 for superstructure of bridge over Cuyahoga River, Cleveland, for the Newburg & South Shore Ry. Co. Bridge is to be of one span of 160 ft. single leaf and double track and is to be of the rolling lift type. The contract for grading has been let to Wm. Kenefeck, Kansas City. He also has the contract for all masonry for bridge over Canal and for Broadway and Howard St. subways. H. L. Schuler, Ch. Engr., 70 Jones Ave.

COLUMBUS, O.—Contracts for bridge substructure work has been let as follows: Graham bridge, R. E. Wilkins, $1,144; Ranke bridge, Reid & Snouffer, $1,592; Price bridge, Reid & Snouffer, $1,012; Gantze bridge, C. D. Swartz & Co., $2,652.

LONDON, O.—Bids are asked until June 5 for building two stone arches and one new bridge abutment; total estimated amount of stone, 690 perches. J. H. Asher, Engr.; C. A. Taylor, County Audr.

NEWARK, O.—Hearings will be held June 8 on construction by county of bridge over Licking River at Orchard St., Newark.

INDIANAPOLIS, IND.—Contract for building stone arch bridge over Fall Creek at College Ave. was let to William Fife & Co.; contract involves about $79,600.

MADISON, IND.—Bids are asked until June 2 for stone substructure and fills for three steel bridges, and for masonry and fills for one stone arch. G. F. Crozier, County Audr.

MARION, IND.—County Commissioners will receive bids until June 20 for a 175-ft. bridge over Mississinewa River in Mill Township. Ancil R. Smith is County Bridge Engr.

MUNCIE, IND.—Reported that bids are to be asked at once for bridge over White River at Delaware St., for which $18,000 is appropriated. M. H. Doweny is County Engr.

RICHMOND, IND.—Contract for a bridge in Green has been let to New Castle Bridge Co., New Castle, Ind., for $3,595.

ESCANABA, MICH.—Bridge is to be built over Escanaba River at Wells. Erick Anderson, County Road Comr., is one of the committee.

MENDON, MICH.—Contract for Nottawa St. bridge let to Massillon Bridge Co., Toledo, O., for $3,600.

ONECO, ILL.—Contract for two bridges in this place let to W. H. Shons for $1,349.

BRODHEAD, WIS.—The contract for local bridge work let to Elkhart Bridge Co., Elkhart, Ind., for $1,300.

MILWAUKEE, WIS.—The following bids were received for erecting bascule bridge at West Water St.: American Bridge Co., New York, $131,000; Milwaukee Bridge Co., Milwaukee, $127,400; The Scherzer Lift Bridge Co., Chicago, $89,190; Modern Steel Structural Co., Waukesha, Wis., $80,000 (Informal).

OSHKOSH, WIS.—The contract for a steel double track drawbridge for the Wisconsin Central and Chicago, Milwaukee & St. Paul railroads over the Fox River has been let to the Wisconsin Bridge & Iron Co., Milwaukee, Wis., for about $40,000. The same company also secured the contract for constructing a city bridge at North Park for $1,400.

SIOUX CITY, IA.—J. M. Lewis, Cy. Engr., has made plans for steel bridge on concrete foundation to be built over Perry Creek at West Third and Fourth Sts., at a cost of $5,825.

DULUTH, MINN.—G. A. P. Turner, Minneapolis, Minn., has made proposition for constructing ferry bridge over ship canal.

PILLAGER, MINN.—$1,500 voted to aid in constructing bridge over Crow Wing River.

WICHITA, KAN.—Bids are asked until June 6 for the following bridge work: One 312-ft. pile bridge over Little Arkansas River, Kechi; four iron spans, 77 ft. each, Derby; one 32-ft. iron span, Sherman; one 53-ft. iron bridge, Attica; two 85-ft. iron spans, betwen Kechi and Park; one 71-ft. iron bridge, Salem; one 50-ft. bridge, Salem. J. M. Chain, County Clk.

FULLERTON, NEB.—Nance county votes to build three steel bridges.

NEBRASKA CITY, NEB.—Contract for building bridges in Otoe County, Neb., for coming year, has been let to the John Gilligan Co., Falls City, Neb.

ELLENDALE, N. DAK.—Bids are asked until July 13 for steel bridge, 40 ft. span and 16 ft. roadway over Maple River. C. C. Misfeldt, County Audr.

FARGO, N. DAK.—Bids are asked until June 2 for repairing approaches to bridge over Red River of the North at Front St. Arthur Lewis, County Audr.

HILLSBORO, N. DAK.—Bids are asked until June 16 for building bridges after plans, etc., on file with county auditor. Peter Davidson, County Audr.

FORMAN, N. DAK.—Ransom county will spend about $8,000 for new bridges this summer.

GLENDINE, MONT.—We are informed that county commissioners will meet June 1 at which time they will take action on building a bridge of 128 ft. span and 16 ft. roadway, plans for which were made by R. R. Cummins, County Engr.

RED LODGE, MONT.—Bids are asked until June 2 for completing bridge over Clarke Fork River in township 8 G. L. Finley, County Clk.

HANNIBAL, MO.—Contract for bridge work here let to Garrett Bridge & Iron Co., St. Louis, Mo., for $3,042.

KAHOKA, MO.—Bids are asked until June 1 for rebuilding bridge over Honey Creek in Lincoln Township Geo. E. McHugh, County Clk.

OREGON, MO.—Contract for erecting 8 bridges has been let to the John Gilligan Co., Falls City, Neb.

PERRYVILLE, MO.—Bids are asked until June 3 for building stone abutments, etc., for steel bridge over Bois Brule Creek, Lithium. Thos. J. Killian, County Bridge Comr.

BRYAN, TEX.—Building of joint county bridge over Navasota River at San Antonio Crossing is under consideration. J. P. Burns, Sky, Tex., is a County Comr.

GONZALES, TEX.—Contract for two span steel bridge near Ottine has been let to Alsburg & Sons, Houston, Tex., for $6,293.

COLFAX, WASH.—H. H. Wheeler, County Auditor, writes us that contract for steel girder bridge in this place was let to A. Volk, Pullman, Wash., for about $6,880.

EVERETT, WASH.—W. D. Barkhuff, Cy. Engr., is preparing plans and specifications for drawbridge over Snohomish River at Harrison and California Sts. The bridge will consist of two 150-ft. spans and a 233 ft. draw, with concrete piers, and will take the place of the structure at the foot of Everett Ave.

KETTLE FALLS, WASH.—Contract for Broadway bridge over Colville River let to J. N. Bailey, Newport, Wash., for $1,750.

NORTH YAKIMA, WASH.—County commissioners consider construction of bridge over Yakima River at Kennewich. W. I. Lince is a Comr.

SEATTLE, WASH.—Contract for Stark River bridge near Auburn let to Puget Sound Bridge & Dredging Co., for about $3,500.

SPOKANE, WASH.—Contract for constructing 800-ft. wooden bridge and approaches for Spokane Traction Co. has been let to Porter Bros.

OAKLAND, CAL.—Bids are asked until June 1 for constructing concrete bridge over San Leandro Creek, Brooklin. John P. Cook, Clk. County Supervisors.

SAN JOSE, CAL.—Bids are asked until June 2 for rubble stone and concrete bridge over Los Gatos Creek at Alma. Henry A. Pfister, County Clk.

SANTA BARBARA, CAL.—City votes to issue $14,000 of bonds for two bridges.

WEISER, IDAHO.—Contract for a $110,000 steel bridge over Snake River, near this city, has been let to James C. Graham, Spokane, Wash. Stated that bridge will be 225 ft. long and will rest on four granite piers. Gillette-Herzog Co., Minneapolis, Minn., will furnish the steel.

BELLEVILLE, ONT.—Bids are asked until June 12 for 100-ft. steel overhead truss highway bridge, 16-ft. roadway, over Scoot River at Bridgewater; also for one span 43-ft. low truss steel bridge in Madoc. Wm. R. Aylsworth, County Clk.

BUILDINGS.

HALLOWELL, ME.—New farm buildings for Maine Industrial School for Girls will probably be constructed. C. H. Dudley, Com.

BURLINGTON, VT.—Bids are asked until June 15 for constructing buildings, including heating, plumbing, gaspiping and electric wiring, at Fort Ethan Allen, as stated in our advertising columns. Capt. T. B. Lamoreux, Q. M.

BROOKLINE, MASS.—A brick and stone apartment house, 90 × 200 ft., will be erected on Davis Ave. F. Manton Wakefield, Arch., 1 Somerset St., Boston.

BOSTON, MASS.—Bids are asked until June 5 for erecting bowling alley, gymnasium and apparatus for same at Fort Warren. R. H. Williams, Lieut. Q. M.——A. C. Whitney received contract for erecting 3-story brick and stone storage building at 387-95 Boylston St.——The Washington Building Trust will erect an 8-story building at Washington and Bromfield St. at cost of $900,000.

FALL RIVER, MASS.—Brattle & Wilcox have contract for erecting a new registry building at $120,980.

SPRINGFIELD, MASS.—The new post office building will be 53 × 86 ft. and be of gray brick and stone.

TEWKSBURY, MASS.—Bids are asked until June 1 for constructing school house. H. P. Graves, Arch., 40 Middlesex St., Lowell.

PROVIDENCE, R. I.—Bids are asked by joint standing committee until June 3 for constructing fire station at Mt. Pleasant Ave. and Dover St. Martin & Hall, Archs., 806 Union Trust Co. Bldg.

HARTFORD, CONN.—A. B. Stannard, St. James Bldg., New York, received contract for erecting 4-story stone, brick and steel fireproof addition, 104 × 124 ft., to custom house and post office, at $192,330.

NEW BRITAIN, CONN.—The new Swedish Lutheran church will be 58 × 104 ft. and of marble or granite. W. H. Codwell, Arch.

NORWICH, CONN.—Bids are asked until May 28 for erecting marine hospital. H. H. Gallup is State Treas.——The Buckley Const. Co., Plattsburg, N. Y., received contract for erecting the 1-story brick and stone post office building, 62 × 95 ft., at $75,567.

NORWICH, CONN.—The Prescott & Buckley Const. Co., Plattsburg, N. Y., received government building contract at $73,887.

ALBION, N. Y.—New jail being discussed.

BUFFALO, N. Y.—Bids are asked by board public works until May 28 for erecting municipal building and outbuildings at East Ferry St. T. G. Ward is Comr. Pub. Wks.——William Hengerer Co. will erect an 8-story brick and stone building at cost of $200,000.

BROOKLYN, N. Y.—Bids are asked by board of health, 55th St. and Sixth Ave., until June 9 for erecting boiler house and disinfecting plant at the Kingston Ave. Hospital. E. J. Lederle, Ph.D., Pres.——The Brooklyn Rapid Transit Co. will erect a 7-story office building, 50 × 100 ft., at Clinton and Remsen Sts. Building may later be increased to 20 stories.——Lord & Hewlett, Archs., 26 Court St., will prepare plans for Troop C's Bedford Ave. armory.——D. J. Ryan received contract for repairing the borough hall and making ready the court room at $52,365.——Plans are being prepared for a gymnasium, etc., at the Navy Yard, to cost $700,000.

HANNIBAL, N. Y.—New jail will be built.

NEW YORK, N. Y.—Plans have been filed by I. Kleinfeld, Arch., 290 Bowery, for 6-story brick flat, 60 × 81 ft., at 528-32 East 11th St.; for Horenburger & Kleinfeld, costing $50,000; by Horenburger & Straub, Archs., 122 Bowery, for 6-story brick tenement, 50 × 87 ft., at 157-9 Suffolk St.; for I. Grossmann, costing $45,000; by W. P. Walker, Arch., 153 West 130th St., for two 2-story brick stores and tenements, 54 × 56, and 44 × 48 ft., at Morris Ave. and 161st St.; for Alexander Grant, 135 Edgecombe Ave., costing $50,000; by G. F. Pelham, Arch., 503 Fifth Ave., for 1-story brick flat, 49 × 85 ft., at 157-61 East 31st St.; for V. Roth, 401 East 16th St., costing $50,000; by G. F. Pelham, Arch., for eight 5-story brick tenements, 37 × 87 ft., at 141st St. and Seventh Ave.; for Fleischman Bros., 1490 Fifth Ave., costing $240,000; by G. F. Pelham, Arch., for 6-story brick flat, 50 × 67 ft., at Eldridge and Houston Sts.; for N. Silverman, 242 East 71st St., costing $65,000; by G. F. Pelham, Arch., for 6-story brick flat, 50 × 87 ft., at 206-8 East 103d St.; for Haft & Hirsch, 416 East 52d St., costing $155,000; by Schickel & Ditmars, Archs., 111 Fifth Ave., for 6-story brick loft, 57 × 78 ft., at 14-6 West 24th St.; for R. Arnold estate, 9 East 83d St., costing $150,000; by Bernstein & Bernstein, Archs., 72 Trinity Place, for two 6-story brick flats, 50 × 56 ft., at Hester and Mott Sts.; for S. Wallenstein, 1297 Lexington Ave., costing $80,000; by Lowinson & Eisendrath, Archs., 25 West 24th St., for 5-story club house at 683 Fifth Ave., for the Criterion Club, 615 Fifth Ave., costing $80,000; by Clinton & Russell, Archs., 32 Nassau St., for 15-story office building at Beaver and Pearl Sts., for the Century Realty Co., 137 Broadway, costing $600,000; by J. G. Michel, Arch., 49 Liberty St., for 1-story church at Lexington Ave. and 54th St., for St. Peter's German Lutheran Church, 124 East 46th St., costing $80,000; by Israels & Harder, Archs., 31 West 31st St., for 11-story hotel at 70-4 West 55th St., for the Oxford Realty Co., 68 William St., costing $305,000; by G. A. O'Rourke, Arch., 35 Nassau St., for 6-story flat at Lexington Ave. and 113th St., for Weil & Mayer, 35 Nassau St., costing $100,000; by Ernest Flagg, Arch., 35 Wall St., for remodelling 4-story dwelling at 15 East 67th St., for C. T. Bishop, Paris, France, costing $70,000; by T. Graham, Arch., 907 Morris Ave., for 6-story brick and stone lofts, 50 × 95 ft., at 138-40 Elm St., for B. G. Hughes, Center Market, costing $75,000; by Stein, Cohen & Roth, Archs., 92 Fifth Ave., for 2-story brick synagogue, 42 × 74 ft., at 58-60 Rivington St., for Adas Jeshurun Yassan, 117 Bowery, costing $50,000.

NEW YORK, N. Y.—Mrs. Harriette Coogan will erect 16 brick and limestone flat houses, 24 × 41 ft., on 155th St. Cost, $1,040,000.——The new Criterion Club building at 683 Fifth Ave. will be five stories, of marble and limestone, and cost $80,000.——The Erie Ry. Co. will erect an 11-story building at West St.; also new ferry house.

NEW YORK, N. Y.—Bids are asked by board of health, 55th St. and Sixth Ave., until June 12 for erecting disinfecting station at foot of East 132d St. E. J. Lederle, Ph.D., Pres.——Bids are asked by department of charities, East 26th St., until June 8 for erecting dining pavilion at Blackwell's Island, for the Tuberculosis Infirmary of the Metropolitan Hospital. H. Folks, Comr.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

YONKERS, N. Y.—A site for the $250,000 city hall building is being discussed.

HOBOKEN, N. J.—A $50,000 town hall is being discussed.

PATERSON, N. J.—The Monahan Stone Co., Newark, received stone contract for Marshall & Ball's building. Cost, $60,000. A. D. Heyne, Arch., Newark.

ALLENTOWN, PA.—Plans being prepared for the Allentown National bank building. Brick, stone and steel, fireproof, eight stories, 64 × 67 ft., and cost $150,000. Jacoby, Weishample & Biggin, Archs., 514 Hamilton St.

CHAUTAUQUA, PA.—A. Kelsey, Arch., 931 Chestnut St., Philadelphia, will prepare plans for rebuilding the resort for the Chautauqua Institute. Cost, $2,000,000.

CHESTER, PA.—Jacob Myers & Sons, Juniper and Sansom Sts., Philadelphia, received contract for erecting the Pennsylvania Ry. Co.'s new 3-story station, 51 × 80 ft., at $52,000. W. H. Brown is Ch. Engr.

GEORGE SCHOOL, PA.—G. B. Girton, Newtown, received contract for erecting 4-story brick and stone dormitory, 35 × 110 ft. at the George School, at $60,000.

ENOLA, PA.—Jail being discussed.

PITTSBURG, PA.—Bids are asked until June 1 for metallic ceilings in Cargo school building, Boggs Ave.; also kalsomining. Stanley L. Neely is Secy., 820 Frick Bldg.

PHILADELPHIA, PA.—Dietrich & Bowser received contract for erecting G. B. Wilson's 4-story limestone and terra cotta store building, 53 × 230 ft., at 1016-18 Chestnut St., at $50,000. Mahlon H. Dickinson, Arch.——H. C. Dahl, 408 South Fifth St., received contract for J. P. Wilson's 6-story brick warehouse, 100 × 120 ft., at Second and Dock Sts. Steam heating and electric elevators to be installed.

READING, PA.—G. W. Beard & Co. received contract for erecting the Marks Reformed Church; stone church, 116 × 116 ft., at Greenwich and Ritter Sts.

STATE COLLEGE, PA.—S. F. Payne & Co., 401 South Juniper St., Philadelphia, received contract for erecting 2-story stone library for the Pennsylvania State College, at $150,000.

WILMINGTON, DEL.—Competitive plans have been asked by the Wilmington Trust Co. for 12-story brick, stone and steel bank and office building at 10th and Market Sts. Address, Col. A. C. Du Pont.

ANNAPOLIS, MD.—Plans being prepared for new granite and steel fireproof chapel, 100 × 120 ft., at the Naval Academy. Cost, $400,000. E. Flagg, Arch., 35 Wall St., New York.

BALTIMORE, MD.—R. P. Allen, Arch., Central Savings Bank Bldg., is preparing plans for 5-story brick, stone and steel fireproof building at 119-21 West Baltimore St., for the Sheppard & Enoch Co.——A. M. Carroll, 719 Lenox St., received contract for erecting 1-story brick and stone synagogue, 54 × 71 ft., at High and Stiles Sts., at $50,000.——T. L. Jones & Son, 319 Clay St., received contract for St. Paul's English Reformed Church at Calhoun and Mulberry Sts. It will be one story, 106 × 106 ft., and cost $46,000.——G. C. Haskell, Arch., Central Savings Bank Bldg., is preparing plans for Dr. T. A. Ashby's 8-story brick, stone and steel fireproof apartment house at Madison Ave. and Dolphin St.——J. E. Lafferty's plans for the new Immanuel Baptist Church, 90 × 155 ft., St. Paul and North Ave., have been accepted. Electric light system to be installed. Seating capacity, 2,200.

WASHINGTON, D. C.—C. B. Keferstein, Arch., 734 15th St., is preparing plans for 3-story brick and stone apartment house, 150 × 200 ft., at 30th and Q Sts. Cost, $150,000.——W. McShane, 1517 South 13th St., Philadelphia, received contract for erecting 3-story stone addition to Trinity College, at $80,000.——Lord & Hewlett, Archs., 16 East 23d St., New York, have started final plans for new 5-story marble and steel fireproof agricultural building, 200 × 400 ft. Cost, $1,500,000.——York & Sawyer, Archs., 156 Fifth Ave., will prepare plans for the American Security & Trust Co.'s 1-story stone and steel fireproof bank building, at 15th and Pennsylvania Aves. Cost, $150,000.

WASHINGTON, D. C.—Bids are asked until June 6 for constructing 2-story brick and steel building for equipment at Navy Yard, Norfolk, Va., to cost not more than $68,000. M. T. Endicott, Ch. Bureau Yards and Docks.

NORFOLK, VA.—R. H. Hunt, Arch., Chattanooga, Tenn., will prepare plans for $45,000 church building.

ROANOKE, VA.—The Norfolk & Western Ry. Co. will erect a $50,000 addition to office building; also $150,000 addition to car shops.

ELKINS, W. VA.—Hobbs & Co., Fairmount, received contract for the 3-story brick and stone building, 64 × 103 ft., for the Presbyterian College. Cost, $45,000.

MARTIN'S FERRY, W. VA.—Newland & Wilson submitted lowest bid for erecting school building at $54,421. Bids rejected as being about $2,000 in excess of appropriation.

WINSTON SALEM, N. C.—F. P. Milburn, Arch., has completed plans for the Southern Ry. Co.'s passenger station. Bids will soon be asked.

ALBANY, GA.—W. T. Hadlow Co., Jacksonville, Fla., received contract for erecting new court house at $40,000.

ATLANTA, GA.—H. L. Walker, Arch., has prepared plans for the Vendome Bldg. Co.'s 10-story apartment house. C. W. Horn is Vice-Pres.——A $250,000 memorial building to John Wesley will probably be erected.

CARNESVILLE, GA.—Bids are asked until July 1 for erecting a 2-story brick court house, 65 × 95 ft. T. J. Crow, Ordinary, Franklin County.

ELBERTON, GA.—Bids are asked until June 6 for erecting Bethesda Methodist Church building. W. B. Norman, Chn. Bldg. Com.

VALDOSTA, GA.—New court house discussed.

GULFPORT, MISS.—Bids are asked until June 1 for erecting new brick and stone jail. A. J. Bryan & Co., Archs., 1104 Hennen Bldg., New Orleans, La. Address A. J. Bond, Mississippi City.

JACKSON, MISS.—R. E. Kennington, Secy. Jones-Kennington & Co., writes us that their 7-story office building, 80 × 100 ft., will be of steel, pressed brick and terra cotta.

PORT GIBSON, MISS.—The Chamberlain-Hunt Academy will be enlarged.

MERIDIAN, MISS.—Bids are asked by board of trustees until May 29 for improving brick dormitory. R. H. Hunt, Arch., Chattanooga, Tenn. R. C. King, Secy., Mississippi A. & M. College.

MONROE, LA.—Bids are asked by the Monroe National Bank for erecting new bank building.

SUMMITVILLE, TENN.—Preparations are now being made to erect a new school house.

LOUISVILLE, KY.—A 7-story office building may be erected on Fourth Ave. A. E. Mueller is interested.

MEMPHIS, TENN.—Geo. Moore & Co., Nashville, received contract for erecting addition to the custom house at $198,400.——A new union passenger station being discussed. R. Harding, Vice-Pres. Missouri Pacific Ry. Co., is interested.——New cathedral being discussed.

PADUCAH, KY.—The addition to the government building will cost about $70,000.

CINCINNATI, O.—D. H. Burnham & Co., Archs., Rookery Bldg., Chicago, Ill., are receiving bids for the First National Bank's 18-story brick, granite and steel fireproof building. Power and electric light plants to be installed.——Bids will soon be asked for erecting the Baltimore & Ohio Southwestern Ry. Co.'s freight houses and freight warehouse on Second St. Main building will be five stories, of brick and stone. Twelve electric elevators will be installed. Entire cost, $1,000,000.——The Emery estate will erect 3-story brick and stone flat building, 120 × 291 ft., at Gilbert Ave. and Locust St. Cost, $75,000.

CHILLICOTHE, O.—Bids are asked until June 2 for erecting M. E. stone church. Address F. L. Packard, Arch., Columbus.

CLEVELAND, O.—Bids are asked by board trustees until June 9 for erecting cottage "F" on building site at Ohio Hospital for Epileptics. F. L. Packard, Arch., Columbus. A. P. Ohlmacher, M. D., Secy.——Plans and specifications for new government building are on exhibition at the Builders' Exchange.——The new steam engineering building for the Case School of Applied Science will be 40 × 90 ft.

DUNKIRK, O.—Fire has destroyed property valued at $100,000. Mahon & Co., First National Bank, Lydeck Bros. and the Dunkirk Telephone Co. are the heaviest losers.

LIMA, O.—F. L. Packard, Columbus, and J. A. Chapin, Archs., will prepare plans for new high school building. Cost, $75,000.

SPRINGFIELD, O.—The new city prison and workhouse will be located on the present site of the Central engine house.

TOLEDO, O.—Bids are asked by board of education until June 4 for erecting school building. M. M. Fowler, Clk.——Morgan Sheehy received contract for constructing W. L. Milner Co.'s new building, at $80,000.

FORT WAYNE, IND.—The German Lutherans are preparing to erect new hospital. Address Pastor.

FRENCH LICK, IND.—Bids will soon be asked for erecting 100-room addition to the French Lick Hotel. Cost, $110,000. Address Thos. Taggart.

HUNTINGTON, IND.—A new court house and city hall is contemplated. Address County Comrs.

INDIANAPOLIS, IND.—The Y. M. C. A. will make additions to North Illinois St. property. Address Secretary.——Contract will be let in June or July for erecting the Indiana Industrial School for Girls. Cost, $150,000. J. T. Stout is member of commission.

LOGANSPORT, IND.—New city hall will be built.

RICHMOND, IND.—D. G. Reid, New York, has donated $50,000 to the city for new hospital, providing $25,000 is raised by citizens.

WABASH, IND.—A new county hospital will be built. Address Commissioners of Wabash County.

KALAMAZOO, MICH.—Court house will be enlarged at cost of $50,000.

CHICAGO, ILL.—W. L. Bush will erect a 12-story apartment hotel, 145 × 150 ft., at cost of $600,000. W. T. Merrick, Arch., is preparing plans. Union Const. Co. will erect building.——Plans have been completed for the Lake St. Elevated Road Co.'s 3-story pressed brick and stone station, 40 × 100 ft. Cost, $75,000.——S. D. Kimbark will erect 12-story pressed brick and terra cotta fireproof building, 40 × 172 ft., at 151-3 Wabash Ave. Cost, $300,000.

DANVILLE, ILL.—Bids are asked until June 15 for constructing officers' quarters, heating, ventilating, etc., at Danville Branch, N. H. D. V. S. Maj. M. J. Barger, Treas.

LINCOLN, ILL.—Jobst & Son, Peoria, received contract for new court house, at $131,000.

MACOMB, ILL.—Contract for new court house not yet awarded. Lowest bid, $104,000.

PEORIA, ILL.—Reeves & Baille, Archs., are preparing plans for the improvements to the Niagara building, by which it is to be transformed into a European hotel from an office building. Cost, $50,000.

MADISON, WIS.—J. W. Jennings, University Arch., is preparing plans for new chancel building, 112 × 180 ft. Appropriation, $100,000.

AMES, IA.—H. W. Schlueter, Chicago, received contract for new Iowa State College building at $262,000, excluding heating and plumbing, etc.

CLINTON, IA.—A new Y. M. C. A. building will be erected. Cost, $60,000. Mrs. W. I. Hayes is interested.

DENISON, IA.—Bids are asked until June 9 for erecting court house. M. J. Collins, County Auditor. G. A. Berlinghof, Arch., Beatrice, Neb.

DUNKERTON, IA.—Bids are asked until June 15 for erecting the First National Bank's brick building. Murphy & Ralston, Archs., Waterloo.

FORT DODGE, IA.—New armory will be erected.

REINBECK, IA.—A new city jail will be erected.

BIG LAKE, MINN.—Bids are asked by school board until June 4 for erecting school building. J. M. Haven, Clk. S. H. Haas, Arch., St. Cloud.

BRYCELYN, MINN.—Bids are asked until June 10 for erecting school building. A. E. Wilcox, Clk. Kinney & Detweiler, Archs., Minneapolis.

DULUTH, MINN.—Plans have been prepared for a 3-story brick school building, 82 × 146 ft., on Second Ave. Cost, $60,000. Rev. Jas. McGolrick is interested.

FORT SNELLING, MINN.—Bids are asked until June 3 for constructing gymnasium and post exchange building. Geo. E. Pond, C. Q. M.

TWO HARBORS, MINN.—Bids are asked until June 16 for erecting county jail and sheriff's residence. J. P. Paulson, County Auditor. (See advertising columns.)

MITCHELL, S. D.—Bids are asked until June 1 for erecting city hall building. W. L. Dow & Son, Archs., Sioux Falls. W. H. Herbert, Cy. Audr.

SPRINGFIELD, S. D.—Bids are asked by Department of Interior, Washington, D. C. until June 2 for furnishing and erecting dormitory and laundry and constructing water and sewer systems at the Indian Boarding School. W. A. Jones, Comr.

YANKTON, S. D.—Plans are being prepared for a new post office building. Cost, $80,000.

CHEYENNE, WYO.—Capt. W. Scott, Q. M., writes us the following awards have been made for erecting public buildings at Fort D. A. Russell: Bradley & McGarvey, lieutenants' quarters, $12,666; pump house, $5,795; stables, $15,550; barracks, $38,400; work shops, $2,598; Co. S. quarters, $5,275; gun shed, $12,400; W. O. Morrison, Denver, Colo., bakery, $6,600; Harris & Alger, Philadelphia, Pa., heating and installing boiler in pump house, $8,095; E. B. Hendrie, Denver, Colo., electric wiring, $1,815, and J. H. Eisenhart, Denver, Colo., constructing bake oven, $949. Plumbing has been re-advertised.

KANSAS CITY, MO.—A 7-story brick and stone structure will be erected on Broadway for the Harvey-Dutton Dry Goods Co. A. Van Brunt & Bro., Archs., 716 Delaware St.——The location for new union depot being discussed. Cost, $4,000,000. President Ross, Union Depot Bridge & Terminal Co., is interested.

ST. LOUIS, MO.—A 5-story hotel, 73 × 80 ft., will be built at 19th and Market Sts. Cost, $60,000. W. A. Sprague, Arch.; also a hotel, 73 × 160 ft., at 18th and Chestnut Sts.

JEFFERSON CITY, MO.—Plans for improvements at the penitentiary have been approved. A new building for female convicts will be erected.

ATKINS, ARK.—Two brick buildings will be built, one by E. Darr and the other by D. Montgomery.

LITTLE ROCK, ARK.—F. W. Gibb, Arch., 112 Louisiana St., has prepared plans for two 2 and 3-story brick buildings for the State Lunatic Asylum. Cost, $140,000.——The new state capitol building will be erected on site of the old penitentiary and cost $1,000,000. Judge J. B. McCaleb is Chn. State Capitol Comrs.

VAN BUREN, ARK.—A Y. M. C. A. building will be erected.

AUSTIN, TEX.—Fischer & Lambie received contract for erecting main building for St. Edward's College, which will be four stories and 50 × 107 ft., with wings 50 × 80 ft.

HOUSTON, TEX.—Bids are asked until June 15 for erecting the Commercial National Bank's 6-story fireproof building. Green & Svarz, Archs., 211-16 Mason Block.

SAN ANTONIO, TEX.—Plans being prepared for new jail.

ALBUQUERQUE, N. M.—The University of New Mexico has plans for extensive expansion.

SEATTLE, WASH.—The Seattle Athletic Club's 6-story building at Fourth and Cherry Sts. will cost $80,000. O. O. Denny has contract. Bebb & Mendel, Archs.——J. Graham, Arch., has completed plans for the new Butterworth building at First Ave., between Pine and Virginia Sts.——W. D. Kimball, Arch., has prepared plans for C. H. Baker's 5-story brick and stone warehouse building, 49 × 90 ft., at Second Ave. and Main St. Passenger and freight elevators installed.——The contract for erecting one set of field officers', captains' and non-commissioned officers' quarters at Fort Lawton has been awarded to R. M. Henningsen at $46,500.——E. W. Houghton, Arch., has plans for Dr. de Soto's new 4-story hospital building. Cost, $80,000.——Preliminary plans are being made by W. D. Van Sielen, Arch., for apartment house to cost $60,000.——Stewart & Holmes Co. will construct a 6-story building for their wholesale drug business.

SPOKANE, WASH.—The Spokane Falls Gas Light Co. proposes to erect 3-story building.

WALLA WALLA, WASH.—It is stated that the new high school building will cost $60,000, including furnishings, etc.

PORTLAND, ORE.—Allen & Lewis contemplate erecting a 5-story brick and stone building, to cost probably $125,000.

BERKELEY, CAL.—A 4-story hotel will be erected by the Hotel Berkeley Co. Capital $200,000.

EUREKA, CAL.—A 3-story building will be erected on the Rich's estate on F St.

LOS ANGELES, CAL.—The Salvation Army will erect a $75,000 building, containing gymnasium, reading rooms, etc.——A. L. Haley, Arch., has completed plans for H. Jaekin's 5-story brick hotel at Olive and Second Sts. Hydraulic passenger elevator installed.

OAKLAND, CAL.—New court house discussed.——Emergency hospital being discussed by employees of the Southern Pacific Ry. Co.

SAN BERNARDINO, CAL.—Stevenson Bros. submitted lowest bid for erecting theatre building, at $45,300. Contract not awarded.

SACRAMENTO, CAL.—The Sacramento Club will probably erect a 5-story brick and iron house at 10th and L Sts. Cost, $75,000.

SAN FRANCISCO, CAL.—Bids are asked until June 2 for constructing gymnasium and post exchange building at Fort Baker. C. P. Miller, Deputy Q. M.——John Lee will erect a 6-story brick and terra cotta semi-fireproof apartment house. Steam and electric plants installed. Cost, $125,000.——Shea & Shea, Archs., are preparing plans for M. L. Cook's $60,000 business building at Second and Minna Sts.——The University Club will probably erect new club house. Probable cost, $250,000. Wm. Bown is Pres.——Ruffino & Bianchi received contract for erecting J. L. Flood's building at Powell and Eddy Sts., at $113,373.——The University of California will erect two new buildings. Appropriation, $250,000.

MILL VALLEY, CAL.—The Outdoor Art Club will erect clubhouse.

DOUGLAS, ARIZ.—The Copper Queen Co.'s store will cost about $100,000.

PRESCOTT, ARIZ.—Bids are asked until June 8 for erecting buildings at Whipple Barracks, Ariz., as stated in our advertising columns. Chas. C. Wallcutt, Jr., Constructing Q. M.

WINNEMUCCA, NEV.—Bids are asked until June 8 for constructing county pest house. J. T. Dunn, Clk.

OGDEN, UTAH.—A new post office will be erected on Grant St. Cost, $200,000. F. J. Kissel, Arch.

SALT LAKE CITY, UTAH.—New court house discussed.——S. S. Walker will erect a business block at 34 West Second South St. Cost, $150,000.——The Nome Telephone Co. will erect 3-story brick, stone and steel fireproof building at State and First South Sts., at cost of $75,000 to $100,000.

SALT LAKE CITY, UTAH.—Bids are asked until June 15 for constructing a post exchange and gymnasium building, including plumbing, gas-piping, heating and electric wiring, at Fort Douglas. S. V. Ham, Q. M. (See advertising columns.)

WINNIPEG, MAN.—The tender of Smith & Sharpe has been recommended for acceptance for erecting Carnegie library at $71,063. Jas. Chisholm, Arch.

FAIRVIEW, B. C.—Site being considered for new $90,000 high school building.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

WATER SUPPLY AND IRRIGATION.

AUGUSTA, ME.—City votes in June on municipal ownership works of Augusta Water Co.

DEXTER, ME.—Bids as follows were received for laying pipe for works: Eastern Construction Co., $16,354; George E. Foster, Lisbon Falls, Me., $9,366; John T. Langford, $11,665; Loring N. Farnham, $11,593; Charles N. Taylor, $11,148; John F. Magee Co., $10,911.

AMHERST, MASS.—We are informed that plans have not been perfected by the Amherst Water Co. for extending its mains from Shutesbury to Amherst. W. W. Hunt, Supt.

FRANKLIN, MASS.—Town voted last week on purchase of plant of Franklin Water Co. Henry E. Ruggles is on water committee.

LOWELL, MASS.—Town of Dracut is asking that city extend mains to supply it with water. Cost would be about $33,117. R. J. Thomas is Supt. W.-W.

MILFORD, MASS.—Contract for one year for furnishing water for 100 hydrants has been let to Milford Water Co. for $5,000.

NEWTON, MASS.—$28,000 is to be appropriated for new pumping plant.

OXFORD, MASS.—Works proposed. Byron Clark is interested.

REVERE, MASS.—Committee, John B. Perkins, Chn., is to consider taking of plant of Revere Water Co. by town.

SALEM, MASS.—Water board is considering increasing water supply by building dams around Wenham Lake.

SPRINGFIELD, MASS.—The contract for furnishing 20-in. cast-iron pipe and special castings has been let to the Reading Co.

WILLIAMSBURG, MASS.—$45,000 works were voted on.

ALBION, R. I.—Albion Light & Water Power Co. will put in works here.

PROVIDENCE, R. I.—We are informed that nothing will be done this year toward a new pumping engine and additional force mains. Robt. E. Smith is Comr. Pub. Works.

FILLMORE, N. Y.—Fillmore Water Co., Chas. Ricker, Pres., will soon commence work on gravity water system.

FORT PLAINS, N. Y.—Town votes not to appropriate $7,500 for completing water system improvements.

LOCKPORT, N. Y.—Fire and water committee has recommended that bids be received up to June 1 for supplying city with not less than 2,000,000 or more than 6,000,000 gallons of pure water per day.

NEW YORK, N. Y.—Bids are asked until June 2 by Commissioner Water Supply, Gas and Electricity, 13 Park Row, for furnishing double and single nozzle "New York" case hydrants. Bids are also asked until June 4 for furnishing five automatic filter controllers at Springfield (L. I.) pumping station and ten automatic filter controllers at Jamaica pumping station. Robt. Grier Monroe.

OSWEGO, N. Y.—Water department is asking special election to secure $26,868 for constructing 16-in. supply main from East Reservoir and two 10-in. distribution mains.

WATERLOO, N. Y.—Franchise for works granted to Seneca Lake Water Co. and construction of plant will be commenced soon. Supply is to be from Seneca Lake, where stand-pipes will be located.

BLOOMFIELD, N. J.—Town may buy part of works of Orange Water Co.

BORDENTOWN, N. J.—City contemplates purchase of works of Bordentown Water Co.

LAUREL SPRINGS, N. J.—Franchise for works here given to Laurel Springs Water Co., care Chas. S. King, 303 Market St., Camden, N. J. Company will also supply Stratford, Magnolia, Lowerdale and Clementon.

HAZELTON, PA.—Reported that Hazleton Water Co. are to erect pumping station and additional pipe line.

MEADVILLE, PA.—Bids are asked until June 10 for pump house, 700 tons cast-iron water pipe and specials, etc., as described in our advertising columns. Geo. S. Cullum, Supt. W.-W.

MIDDLEBURG, PA.—Contract for water supply for fire hydrants for this place has been let to T. F. Bradenbaugh and H. G. Frederick, Millersburg, Pa., and a franchise for water-works has been granted to them. The supply will be by gravity from springs on Stroude Mountain. M. M. Dreibelleis, C. E., Harrisburg, Pa., is to make surveys, etc., and work will be started in August.

PITTSBURG, PA.—$90,000 has been appropriated for extending downtown water system and plans for works have been prepared by A. B. Shepherd, Supt. W.-W.

PHILADELPHIA, PA.—Stated that Pennsylvania Railroad Co. is to spend about $200,000 in bettering its water facilities in the Alleghany Mountains. Track tanks are to be located and a new main built from Bens Creek to Potage and thence to Wilmore, a distance of 10 miles.

WHEELING, W. VA.—Water board is asking appropriation of $75,000 for new water mains. J. R. Butts is Pres. Bd.

SAVANNAH, GA.—Better works being sought.

NATCHEZ, MISS.—City will purchase local works and sewerage plant for $150,000. Chas. T. Chamberlin is on W.-W. Comm.

PADUCAH, KY.—Stated that the Paducah Water Co. will close contracts about July 1 for two boilers, 1,000 ft. 30-in. pipe for suction, and ball joints; also for 4,000,000-gallon mechanical filter.

RICHMOND, KY.—Reported that Richmond Water & Light Co., J. A. Sullivan, Pres., will extend and better its plant.

AKRON, O.—Purchase of Akron Water Co.'s plant by city likely.

COVINGTON, O.—City grants Central Covington supply of water from municipal works for term of ten years.

DAYTON, O.—S. E. Rowe, Supt. W.-W. has estimated that 16,195 ft. of pipe will be required for laying mains in various streets; estimated cost is $19,138.

STRASBURG, O.—Reports state that bids are asked until May 25 for constructing 30-ft. diameter storage reservoir, also for cast-iron pipe, 2½ tons spirals, gate valves, hydrants, etc. E. R. Davis, Newcomerstown, O., Des. Engr.; E. W. Speidel, Vil. Clk.

CLINTON, IND.—D. C. Johnson writes us that the franchise for works will be granted to C. L. Olds Construction Co., Fort Wayne, Ind. The works will cost about $38,190, and the supply will be from wells. There will be six miles of pipe line. A. T. Maltby, Chicago, Ill., is Des. Engr.

BAY CITY, MICH.—City by straw vote decides to retain municipal water and light plants.

BATAVIA, ILL.—Bids are asked until May 30 for material, pipes, hydrants, etc., for laying about 4,000 ft. 4 and 6-in. pipe, and setting fire hydrants. Geo. H. Burnett, Cy. Clk.

CRETE, ILL.—Village plans works to cost $14,000.

JACKSONVILLE, ILL.—City supply inadequate.

BARABOO, WIS.—Baraboo Water-Works Co. has issued mortgage on its plant for $125,000.

CEDAR RAPIDS, IA.—City buys local works for $500,000.

IOWA CITY, IA.—Iowa City Water-Works Co. will spend $20,000 in improvements.

ROCK RAPIDS, IA.—J. M. Pardens, Mayor, writes us that it was recently voted not to purchase the works of the local company. No improvements are contemplated.

EVELETH, MINN.—Bids are asked until June 2 for the improvement of the water-works system. Louis Larson, Cy. Clk.

SPRINGFIELD, S. DAK.—Bids are asked until June 2 for constructing water, sewer and laundry systems at Indian Boarding School. W. A. Jones, Comr. Indian Affairs, Washington, D. C.

GREAT FALLS, MONT.—Bids are asked until June 15 for 42 fire hydrants, eleven 8-in. gate valves, 24 6-in. gate valves and 1,500 jute packing. W. H. Smith, Cy. Clk. Specifications on file at office of Engineering News. (See advertising columns.)

CAMERON, MO.—Hiram Phillips, City Hall, St. Louis, Mo., has made plans for works for this place and an $80,000 bond issue will be voted on in June.

SULPHUR SPRINGS, TEX.—City's water system will be extended at cost of $20,000.

LAWTON, OKLA.—Stated that U. S. Geological Survey, Gerard H. Mattles, Ch. Engr., will construct city water-works.

DAVIS, IND. TER.—H. H. Helen has been making surveys for proposed works here. Supply to be from Arbuckle Mountains, five miles distant.

DURANGO, COLO.—Bids are asked until June 2 for grading and excavating the flume line from Florida River to the reservoir. C. L. Russell, Cy. Clk.

FLORENCE, COLO.—City will adopt meter system.

LA VETA, COLO.—Works to be voted on.

STERLING, COLO.—C. L. Goodwin, Town Clk., writes us that the contract for constructing complete works, bids for doing which were opened May 18, has been let to J. E. Hurd, 223 Plum St., Pueblo, Colo., for $58,500.

CLE ELUM, WASH.—Contract for 29,000 ft. water pipe, 12 hydrants and all connections for works for this place has been let to Pacific Coast Pipe Co., Seattle, Wash., for $10,578.

PORT ANGELES, WASH.—City is said to offer water-works franchise to parties submitting the most favorable proposition.

SEATTLE, WASH.—The Northwestern Irrigation & Power Co. will build a 27-mile ditch to furnish water to 16,000 acres of land along the Columbia.

CORVALLIS, ORE.—The Corvallis Water Co. was the only bidder for installing water system on basis of extended franchise. The cost of the proposed system was $20,000.

SALEM, ORE.—Contract for laying 7,000 ft. 4-in. and 1,100 ft. 2½-in. water mains has been let to Jacobsen, Bade & Co., Portland, Ore., for $3,509.

OAKLAND, CAL.—Order before council for city engineer to make plans and estimate of cost for distributing system.

PORTERVILLE, CAL.—City works discussed.

SACRAMENTO, CAL.—Reported that bids are asked until June 9 for erecting steel water tower on grounds of Agnews State Hospital. T. S. Montgomery, Secy. Bd. Mgrs.

SAN BERNARDINO, CAL.—City will purchase water rights and establish system.

SAN LUIS OBISPO, CAL.—Reported that bids are asked by city clerk until June 1 for constructing reservoir.

UPLAND, CAL.—Citizens Land & Water Co. may purchase water rights, reservoirs, pipe lines, etc., for $15,000. Matter will be decided July 11. M. F. Palmer is Secy.

PRESCOTT, ARIZ.—This city is to build a 1,500,000-gallon reservoir. At a recent opening of proposals but one bid was received for doing the work and the matter will probably be readvertised. Plans and specifications for the work were made by A. B. Madder, City Engr., who may be addressed for further information.

MT. PLEASANT, UTAH.—Plans are under way for system of city water-works to be put in this summer.

PAYSON, UTAH.—J. S. McBeth writes us that matter of reservoirs and irrigation project will not assume definite shape until September. The whole cost is estimated at about $400,000, and surveys and measurements for the work are now being made.

MONTREAL, QUE.—Bids reported as asked until May 31 for 650 tons 12-in. and 16-in. cast-iron water pipes. L. O. David, Cy. Clk.

NORTH SYDNEY, N. S.—Town votes $45,000 to extend water mains.

HAMILTON, ONT.—$100,000 voted by town for improving water service, building bridge and road improvement.

PORT ARTHUR, ONT.—J. McTeague, Town Clk., writes us that town votes $85,000 for constructing water-works. Willis Chipman, 103 Bay St., Toronto, Ont., is Des. Engr.

WHITLEY, ONT.—Municipal water and light plants are to be voted on. Plans were made by R. E. Speakman, C. E., Toronto, Ont.

BONDS.—Columbus, Ga., will sell August 1, $250,000 water bonds.——Alexander City, Ala., votes June 1 on $17,000 water-works construction bonds.——St. Cloud, Minn., through Henry J. Limperich, Cy. Clk., will receive bids until June 15 for sale of $100,000 water-works purchase bonds.——Floresville, Tex., votes June 12 on $14,000 water-works bond issue.——Paris, Tex., may vote June 20 on $75,000 bonds for new pipe line.——La Veta, Colo., may vote on $15,000 water-works construction bonds.

NEW COMPANIES.—Fillmore Water Co., Fillmore, N. Y.; Charles Ricker, N. M. Wells, R. L. Richardson.——Richmond Water Co., 15 Exchange pl., Jersey City, N. J.; $250,000; Saml S. Moore, E. H. Green, Clarence F. Walker.——Company organized with $25,000 capital by W. A. Clark, W. G. Childs and others at Columbia, S. C., to furnish water to local mill district.——South St. Paul Water Co., St. Paul, Minn.; $10,000; Chas. A. Pace, Chas. W. G. Withee, Robt. E. Olds.——International Water Co., El Paso, Tex.; $1,000,000; W. J. Davis, Los Angeles, Cal.; C. E. Mills, Morenci, Ariz.; W. H. Brophy, Bisbee, Ariz.——Temple Water Co., Temple, Okla.; $5,000; J. W. Gower, T. J. Hurst, Arthur L. Walker.——Central Oregon Irrigation Co., Portland, Ore.; $5,000,000; E. E. Lytle, Benton Killin, J. T. Ross.——Butte County Canal Co., San Jose, Cal.; J. P. Clark, Fresno, Cal.; D. C. McCallum, Oroville, Cal.; A. K. Whitton, San Jose, Cal.

SEWERAGE.

BOSTON, MASS.—Bids are asked until June 4 for constructing parts of section 44, 46 and force mains and sewer in connection with Ward St. pumping station. W. N. Davenport, Secy., Water and Sewerage Bd., 1 Ashburton Pl.

BOSTON, MASS.—Bids are asked by metropolitan sewerage and water board, 1 Ashburton Pl., until June 4 for constructing force-mains and sewer in connection with Ward St. Pumping Station. W. M. Brown, Engr.; W. N. Davenport, Secy. (See advertising columns.)

EASTHAMPTON, MASS.—McClintock & Woodfall, Engrs., will prepare plans and specifications for trunk line sewer.

HAVERHILL, MASS.—The construction of a sewer in Mill St. has been recommended. Cost, $2,500.

METHUEN, MASS.—E. B. Roberts, Swampscott, received contract for constructing sewers.

QUINCY, MASS.—T. J. O'Connel submitted the lowest bid for constructing the 20-in. pipe sewer of section 11, at $14,466; Jas. H. Ferguson was lowest for section 12, at $10,822.

WESTFIELD, MASS.—O. E. Parks, Engr., will prepare plans for continuing the northerly sewer system.

ALBION, N. Y.—$3,400 appropriated for repairing the sewer plant at State Refuge grounds.

ITHACA, N. Y.—Bids are asked by sewer commissioners until May 28 for constructing about 2,445 ft. of 6-in. sewers. H. L. Stewart, Supt. of Sewers.

MT. MORRIS, N. Y.—A sewerage system being discussed. M. D. Baker, Engr., has made a survey.

NIAGARA FALLS, N. Y.—Bids are asked by the Carter-Crume Co. until May 28 for constructing sewer in Highland Ave.

POUGHKEEPSIE, N. Y.—Peter Morgan received contract for constructing sewers in Gifford and Duane Sts., at $3,893; Washington St. sewer, Chas. Cook, at $4,161.

BOUND BROOK, N. J.—Bids are asked until June 9 for constructing about 2,800 ft. of sewer in Franklin St. Cost, $2,100.

HOBOKEN, N. J.—Bids are asked until June 10 for constructing sewers in Newark, Grand, 15th Sts. and in Willow Ave. J. H. Londrigan, Cy. Clk.

GUTTENBURG, N. J.—C. T. Vasal received the contract for constructing sewer in Franklin St., at $11,666.

MILLBURN, N. J.—Bids are asked until June 8 for constructing 21,150 ft. 8-in. pipe sewer, 54 manholes etc. A. Potter, Engr., 143 Liberty St., New York.

ALTOONA, PA.—Bids are asked until May 29 for constructing 707 ft. of 48-in. brick sewer in 18th St. J. M. Hileman, Chn. Sewer Com.

LEWISTON, PA.—W. S. Smith writes us that plans are being prepared for the sewer system and bids will probably be asked in August.

NEWCASTLE, PA.—Dean & Haven, New York, received contract for constructing Mahoning Ave. sewer, at $2,686; W. H. Mitchell received the Swansea Ave. sewer contract at $4,832. A sewer will be constructed in Hamilton St.

CAMDEN, PA.—A link sewer, 6 ft. wide, will be constructed at cost of $75,000.

SHROUDSBURG, PA.—J. L. Westbrook, Cy. Engr., writes us that plans are being prepared for sewer system; $29,000 appropriated.

GREENSBORO, N. C.—J. M. Bandy, Cy. Engr., writes us that 7 miles of outfall sewer, with three septic tanks will be constructed.

SHREVEPORT, LA.—Bids are asked until June 26 for constructing about 1,807 ft. of 18 to 24-in. pipe sewer and 1,141 ft. of 30 to 72-in. brick or concrete sewer. C. G. Rives, Compt.

NASHVILLE, TENN.—The following bids have been received for constructing the Phillips and Buttorff sewer: J. Davis, $9,528; G. Davidson, $9,768, and the Nashville Plumbing Co., $10,049.

CUYAHOGA FALLS, O.—H. Paul, Civil Engr., 147 South Howard St., Akron, O., will prepare plans for sewer system.

ELYRIA, O.—Sewer system will be constructed.

WAPAKONETA, O.—Bids are asked until June 6 for constructing 2,550 ft. of 20 to 40-in. two-ring brick sewer, 5,075 ft. 6 to 18-in. pipe, and furnishing appurtenances for same. C. E. Fisher, Clk.

WASHINGTON, IND.—C. H. Bareford writes us that 2½ miles of sanitary sewer system will be constructed and would like to hear from contractors to construct same.

YOUNGSTOWN, O.—Bids are asked by board public service until June 6 for constructing sewer in East Myrtle Ave. G. T. Prosser, Clk.

COLDWATER, MICH.—Bids are asked by board public works until June 10 for constructing about 3,152 ft. of 15 to 36-in. pipe sewers. W. G. Moore, Clk.; Riggs & Sherman, Engrs. (See advertising columns.)

COMPTON, ILL.—Sewer system discussed.

MILWAUKEE, WIS.—An intercepting sewer, 1,000 ft. long, may be built at cost of $8,000.

DES MOINES, IA.—The following bids have been received for constructing sewer system and purification plant at the army post: Iowa Engineering Co., Clinton, $24,900; Municipal Engineering Co., New York, $16,730; O. P. Herrick, $19,750; Cameron Septic Co., Chicago, Ill., $9,500; W. M. Whitman, New York, $10,000.——A sewer system is proposed for the west part of the city. Cost, $30,000 to $50,000.

ALBERT LEA, MINN.—An election may be held June 2 to decide upon paving and constructing about one-half mile of main sewer. Cost, $15,000.

ST. PAUL, MINN.—Bids are asked by board public works until May 28 for constructing sewer in Belvidere St. J. S. Grode, Pres.; R. L. Gorman, Clk.

FORT LEAVENWORTH, KAN.—Bids will soon be asked for constructing sewage purification plant. Cost, $40,000 to $50,000. Maj. D. E. McCarthy, C. Q. M.

SPRINGFIELD, S. D.—(See Buildings.)

BISMARCK, N. D.—Sewer system will cost about $50,000.

JAMESTOWN, N. D.—Bids will soon be asked for constructing sewers. S. Crabbe, Engr., is in charge.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited

GREAT FALLS, MONT.—Specifications have been prepared for the Fort Shaw Indian school water and sewer system.

ST. LOUIS, MO.—Ordinances providing for sewers in the West End and Ninth St. sewer districts have been approved; also for constructing seven streets.

ST. LOUIS, MO.—Bids are asked by board public works until June 9 for repairing sewers. W. Edwards, Secy.

PINE BLUFF, ARK.—Bids are asked by board commissioners until June 10 for constructing sewers in district No. 2. S. C. Alexander, Jr., Secy.

AUSTIN, TEX.—City Engineer Lee is preparing plans and specifications for system of storm sewers in Congress Ave.

FORT BLISS, TEX.—New system of sewers and waterworks contemplated.

ARDMORE, I. T.—A preliminary survey is being made for sewer system. Three miles of sewer will be built at present.

COLORADO SPRINGS, COLO.—Sewer extension will cost $15,000.

PUEBLO, COLO.—J. M. O'Rourke Const. Co. received contract for constructing sanitary sewer system, at $335,889.

SEATTLE, WASH.—Sewer system will be constructed in Laurel Shade. Cost, $3,250.——Specifications approved for sewer in Fourth Ave.

TACOMA, WASH.—Plans are being prepared by city engineer for sewers in Trafton, Sprague and State Sts.

BAKER CITY, ORE.—Bids are asked until June 2 for constructing sewer. W. H. Bentley, Auditor and Clk.

PENDLETON, ORE.—The following bids have been received for furnishing sewer pipe: The Western Clay Co., Portland, $18,357, and the Denny Clay Co., Seattle, standard pipe, $17,664 (contract awarded). Engineer Miller's estimate for sewer system is $38,000.

BERKELEY, CAL.—Specifications adopted for sewers in various streets.——California St. may be sewered.

LOS ANGELES, CAL.—Bids will be asked for constructing 8-in. pipe sewer in Pasadena Ave. H. J. Lelande is Cy. Clk.

SAN FRANCISCO, CAL.—Various sewers have been ordered constructed. C. W. Fay is Clk.——The Smith St. main sewer will cost $54,000.

FORT ROSECRANS, CAL.—Bids are asked until June 1 for constructing sewer and water system. Capt. R. H. Rolfe, Q. M.

SANTA ROSA, CAL.—$5,000 will be required for sewer improvements.

WEISER, IDAHO.—Sewer system being discussed.

OTTAWA, ONT.—June 9 the taxpayers will decide upon constructing sewers. Cost, $10,000.

HALIFAX, N. S.—Bids are asked until June 1 for constructing sewers in Glace Bay. M. F. McNeil, Town Clk.

BONDS.—Election will be held June 16 by Sharon, Pa., to decide upon issue of $80,000; $30,000 will be for completing sewer system.——Cleveland, O., will sell, June 13, $970,000 sewer bonds.——San Francisco, Cal., will hold election to decide upon issuing $70,000 for sewers.

GARBAGE DISPOSAL—STREET CLEANING

BEVERLY, MASS.—Contract for watering streets was let to Josiah N. Trask for $1,725.

ALLENTOWN, PA.—Bids are asked until June 2 for street sweeping machine for cleaning improved streets. H. F. Bascom, Cy. Engr.

ATLANTA, GA.—City may erect and operate two crematories, each costing about $7,000. Dr. J. N. Brawner is Chn. Garbage Com.

SHREVEPORT, LA.—Bids are asked until June 15 for erecting crematory for incineration of garbage, as stated in our advertising columns. C. S. Rives, Comptroller. Proposals for this work were opened May 18, but as only one bid was received at that time, the work is readvertised.

LOUISVILLE, KY.—John R. Saunders, Chn. Special Com. Commercial Club, recommends that garbage reduction plant be built here similar to the one at Vincennes, Ind.

TOLEDO, O.—Matter of garbage collection has been turned over to Board Public Service and they can decide on method of collection.

LOS ANGELES, CAL.—Council will call for bids for sprinkling street of entire city. Harry F. Stafford is Cy. Engr.

STREETS AND ROADS

PORTLAND, ME.—Bids are asked until June 6 for constructing a telford road at Fort McKinley. Capt. A. W. Yates, Q. M., 185 Middle St.——India St. may be widened. M. Rich, Pres. Bd. Trade is interested.

ASHLAND, N. H.—L. E. Pike & Son, Manchester, received contract for laying 8,000 sq. yds. of concrete pavement on Main, Mill and Winton Sts.

ST. ALBANS, VT.—City Engineer Lincoln is preparing plans for sidewalks on Main and Lake Sts.

BOSTON, MASS.—The following bids have been received for laying 26,400 sq. yds. of macadam, 3,480 sq. yds. of gutter paving, etc., in Bennington St.: McGawley & Coughlin, $49,119; Jones & Meehan, $49,643; J. J. Sullivan, $46,414; Daniel E. Lynch, $55,558; W. H. Ellis, $49,228; Coleman Bros., $39,055; James Doherty, $42,316 and Mark H. Lynch, $54,692. The following bids were also opened for paving Nashau St.: D. J. Kelly, $5,822; J. J. Sullivan, $6,008; W. H. Ellis, $5,320; W. J. Rafferty $5,051; Jones & Meehan, $5,404; P. Brennan & Co., $4,658 and McGawley & Coughlan, $5,307.

FITCHBURG, MASS.—$10,000 has been recommended for paving Summer St. with block.

NATICK, MASS.—The sum of $14,800 will be spent on highway along West Central St.

WORCESTER, MASS.—West Boylston St. is being surveyed for new state road.

WOONSOCKET, R. I.—$2,000 has been appropriated for grading Winter St.

BRIDGEPORT, CONN.—Bids are asked until June 12 for laying about 4,100 sq. yds. of brick, wood or bituminous macdam pavement. E. T. Buckingham, Clk. (See advertising columns.)

SOUTH NORWALK, CONN.—East Washington St. will be paved with brick. J. R. Taylor is Cy. Clk.

BINGHAMTON, N. Y.—Bids are asked until June 9 for paving Front, Fayette, Clinton and South Depot Sts. and Prospect and Conklin Aves., with brick; also for building macadam road in Front St. I. C. Hull, Cy. Clk. (See advertising columns.)

GENEVA, N. Y.—Lake St. will be paved.

GLOVERSVILLE, N. Y.—We are informed that the following bids have been received for paving 3,500 sq. yds. with brick: Frank Pidgeon, Saugerties, $10,331; A. Sharp, Albany, $8,533, and A. M. Banker, $8,396 (contract awarded).

NEW YORK, N. Y.—Bids are asked by Department of Parks, Fifth Ave. and 64th St., until June 4 for grading De Witt Clinton Park.——Allen St. may be widened.

NEW BRIGHTON, N. Y.—Bids are asked by President of the Borough, First National Bank Building, until June 5 for paving about 40,900 sq. yds. with asphalt block, brick and granite.

RENSSELAER, N. Y.—Bids are asked until June 16 for paving 34,500 sq. yds. with brick, granite blocks, asphalt and bituminous macadam. C. A. Roemer, Engr., 508 Cannon Pl., Troy. (See advertising columns.)

ROCHESTER, N. Y.—Bids are being received for paving Catherine and West Sts. with asphalt. Cost, $40,000. Also for sidewalks on various streets.

ASBURY PARK, N. J.—A speedway being discussed. E. Wilson is interested.

CAMDEN, N. J.—The following bids were received for constructing 1¼ miles of macadam road: J. R. Shanley, Philadelphia, $12,500, and B. F. Swesten & Son, $13,206. F. W. George, Clk.

CAPE MAY, N. J.—Dietrich & Bowser, Philadelphia, Pa., received contract for constructing 2½ miles of boulevard, 2¼ miles of bulkhead, etc., at $200,000.

NEPTUNE, N. J.—Bids are asked by board freeholders until June 15 for constructing 4½ miles of stone and gravel road on Corliss Ave. John Guire, Dir., Long Branch. W. H. DeNyse, Engr., 164 Broadway, Long Branch. (See advertising columns.)

NEWARK, N. J.—Bids are asked by board freeholders, 196 Market St., until June 11 for constructing 15 miles of telford macadam roads. Thos. McGowan, Dir. (See advertising columns.)

ERIE, PA.—Mayor Hardwick has recommended that new bids be asked for paving West 16th and 12th Sts.

WASHINGTON, D. C.—Bids are asked by the commissioners until June 10 for furnishing paving and sewer materials, as stated in our advertising columns. H. L. West, Comr.

WASHINGTON, D. C.—Bids are asked until June 13 for repairing asphalt pavements. H. B. F. Macfarland, H. L. West, John Biddle, Comrs. (See advertising columns.)

SISTERSVILLE, W. VA.—Road to Padens Valley will probably be macadamized at cost of $30,000. W. R. Staple is interested.

ANDERSON, S. C.—O. H. Sheffield & Co., Engrs., Atlanta, Ga., will prepare plans and specifications for paving. Cost, $30,000.

VALDOSTA, GA.—Business section will be paved with brick. Cost, $25,000.

ALEXANDRIA, LA.—Epple & Hayes received contract for 3 miles of sidewalks at $15,000.

NEW ORLEANS, LA.—Bids will probably be asked in June for paving South Rampart St.

NEW ORLEANS, LA.—Bids are asked until June 1 for repaving Julia and Polymnia Sts. V. Tujague, Compt.

SHREVEPORT, LA.—Bids are asked until June 26 for paving about 90,000 sq. yds. with brick and asphalt, as stated in our advertising columns. C. G. Rives, Compt.

AKRON, O.—South Main St. may be paved.

BELLAIRE, O.—Cherry and Washington Sts. will probably be paved.

CELINA, O.—Bids are asked until June 13, for macadamizing the T. W. Baker Road. M. Lutz, Engr.

CINCINNATI, O.—Various streets will be paved.

ELYRIA, O.—Chestnut and Second Sts. will be paved.

TOLEDO, O.—The intersection of Wayne and Whitney Sts. will be paved.

BLOOMINGTON, IND.—Bids are asked until June 2 for paving Kirkwood Ave. Wm. F. Browing, Cy. Clk.

BLOOMINGTON, IND.—Bids are asked for paving Kirkwood Ave. W. F. Browning.

BLUFFTON, IND.—Wabash St. will be paved. Address City Clerk.

BLUFFTON, IND.—A. Hersher received contract for constructing three gravel roads, at $21,720.

CENTER, IND.—Bids are asked by board commissioners for constructing 8 miles, 4,900 ft. of macadam road. J. A. Spence, Auditor.

CRAWFORD, IND.—City Clerk Hielett is receiving bids for paving College and Jefferson Sts.; also cement sidewalks.

HARTFORD CITY, IND.—Bids are asked for constructing 10,537 sq. yds. of gravel road. D. A. McMichael, Engr.

INDIANAPOLIS, IND.—Bids will soon be let for roadways and sewer system through 2,000 acres of new army post. Address Joseph Keating.——Bids are asked for constructing cement walks and curbs in 36th St. Cost, $8,350; also broken stone roadways in Oliver Ave. Cost, $23,500.

LOGANSPORT, IND.—H. W. Troutman, Cy. Engr., writes us that North St. may be paved with asphalt for two miles. Downtown alleys will be paved with brick.

MARTINSVILLE, IND.—Gregg township will build 12 miles of gravel road. Address Auditor Morgan county.

MT. VERNON, IND.—Harmony township will build nine miles of rock road. Address County Comrs.

NORTH MANCHESTER, IND.—Bids will be asked for paving ¾ of a mile on Main St.

SUMMITVILLE, IND.—Bids will soon be asked for paving Howard St. with brick and laying sidewalks.

TERRE HAUTE, IND.—East Main and Poplar Sts. will be paved with brick.

VINCENNES, IND.—Bids are asked by the commissioners of Knox county for constructing 21 miles, 3,605 ft. of gravel roads.

WASHINGTON, IND.—Petitions in circulation for building 22 miles of gravel roads, three miles of which is to be built in this city. Address County Comrs.

BAY CITY, MICH.—City Engineer Thompson's estimate for paving Washington with brick is $46,137.

DETROIT, MICH.—Bids are asked by board public works until June 1 for furnishing 4,000,000 paving brick. R. Y. Ogg, Acting Comr.

TRAVERSE CITY, MICH.—Bids are asked until June 6 for constructing 8,745 sq. yds. brick pavement on Sixth St. Chas. M. Beers, Cy. Clk.

CHICAGO, ILL.—The following received contracts for paving: Barber Asphalt Co., J. A. Sackley Co., R. F. Conway Co., J. M. Ryan and others.

McHENRY, ILL.—The boulevard to be built around the shores of Geneva Lake will be about 20 miles and cost $100,000.

OSHKOSH, WIS.—The cost of paving Algoma St. with asphalt will be about $60,000. Distance is 1¼ miles. Bids will soon be asked.

DES MOINES, IA.—Third St. will be paved with brick and Franklin St. with asphalt.

DULUTH, MINN.—J. W. Preston submitted lowest bid for paving Michigan St. at $16,145 sand filling and $10,734 tar and gravel filling.

ST. PAUL, MINN.—Bids are asked by board public works until May 28 for paving Mississippi St. with brick. J. S. Grode, Pres.——Maria Ave. will be paved. L. W. Rundlett is Cy. Engr.

OMAHA, NEB.—Paving of alley being discussed.

KANSAS CITY, KAN.—A driveway is contemplated skirting the West Bluff in West Terrace park. G. E. Kessler is Engr. Park Bd.

ROSEDALE, KAN.—The Southwest Boulevard may be paved.

LEAVENWORTH, KAN.—Various streets will be paved.

ST. LOUIS, MO.—Locust St. will be repaved.

ST. JOSEPH, MO.—Ordinances introduced for paving various alleys.——Work will soon start on grading and paving King Hill Ave.

WARRENSBURG, MO.—Bids will soon be asked for macadamizing about two miles of streets.

MARLIN, TEX.—Paving of street being discussed.

DENVER, COLO.—Petition presented for paving 29th Ave. with asphalt.——$10,000 appropriated for improving streets.

PORT TOWNSEND, WASH.—Peter Covno received grading contract at Fort Worden, at $15,000.

SEATTLE, WASH.—Queen Anne, Warren Aves. and Prospect St. may be macadamized with Warren bituminous macadam.——Coast Concrete Co. received contract for sidewalks on Washington St. and 12th Ave. at $7,101.

TACOMA, WASH.—The paving of Pacific Ave. being discussed.

PORTLAND, ORE.—Bids are asked until May 29 for building 1 4-5 miles of road. F. S. Fields is County Clk.

BERKELEY, CAL.—Various streets have been ordered curbed.——Petitions received for macadamizing streets.——Nine streets have been ordered macadamized.

GRASS VALLEY, CAL.—The street from the plaza to Hieronimus will be macadamized. H. Shearer is Supt. Sts.

LOS ANGELES, CAL.—A 30-ft. street may be opened from Second to Third Sts.—Hill St. may be paved with asphalt.

PASADENA, CAL.—Pasadena Ave. will probably be graded, sidewalked and curbed with cement and guttered with cobblestones.——Movement on foot for improving Arroyo Drive. Cost, $2,000. Thos. Easley is interested.

SAN DIEGO, CAL.—G. A. L'Hemeconst, Cy. Engr., writes us that Fifth St. will be paved 8,750 ft. with asphalt. Street is 52 ft. wide.

SAN FRANCISCO, CAL.—A driveway along the shore of the Golden Gate is being considered. Estimated cost, $500,000.——Stone curbs, artificial stone sidewalks and basalt block gutters will probably be constructed on Linden Ave. and Pierce St.

BOISE, IDAHO.—Cement sidewalks will be laid on south side of Warm Springs Ave.

TORONTO, ONT.—The following paving contracts have been awarded: Barber Asphalt Co., Duke St., $8,208; Wilson Ave., $4,424; Spadina Ave., Crescent, $3,418; Barton Ave., $1,435; Phoebe St., $1,132. Warren Bituminous Paving Co., College St., $29,024. Tar macadam roadways, Warren Bituminous Paving Co., Power St., $3,263; Beatrice St., $2,212. W. F. Grant & Co., Dupont St., $15,489. Brick pavements, W. F. Grant & Co., Sheridan St., $8,831; Mechanics Ave. $2,357. Cedar block pavement, City Engineer, Lansdowne Ave., $5,900.

BONDS.—San Antonia, Tex., may issue $500,000 for county roads.——Bay City, Tex., will issue $15,000 for improving streets.——$1,000,000 may be issued by Lake View, Ill., for extending Lincoln Park.——Bids are asked by Park Comrs. until June 2 for purchasing $250,000 bonds, Chicago, Ill.——An election will lbe held in July by Athens, Ga., to decide upon issuing $100,000 paving bonds.——$16,500 will be issued by Williamsport, Pa., for paving and sewers.

MANUFACTURING PLANTS.

PENACOOK, N. H.—Reported that Whitney Electrical Instrument Co.'s plant was much damaged by recent fire.

NEW BEDFORD, MASS.—William & Rogers Co., will move its local plant to the main works at Niagara Falls, N. Y.

MIDDLETON, CONN.—German-American Steel Ball Co., represented by Gen. Wm. P. Snyder, has made overture to purchase works of Worcester Cycle Co., for establishing plant of its own.

PULASKI, N. Y.—Pulaski Glove Co. will erect plant. Wm. J. Peach is interested.

NEW YORK, N. Y.—City may have asphalt plant.

ELIZABETH, N. J.—Loomis Pettibone Gas Machinery Co., 52 William St., New York, N. Y., will build plant of six brick buildings, the largest, 100 × 160 ft., at this place. Stated that about $5,000,000 will be expended on plant.

EASTON, PA.—Olsen Cement Co., Hamburg, Germany, will build cement factory, initial capacity, 5,000 bbls., near here.

HARRISBURG, PA.—Original Bailey mill of Central Iron & Steel Co, damaged by fire; loss, $200,000.

GREENSBURG, PA.—Plans being made for brewery for Star Brewing Co. David P. Hudson; brick and steel, 4-story; cost, $100,000.

JOHNETTA, PA.—Pittsburg & Buffalo Co. will erect $1,000,000 sewer pipe and brick plant here.

MORTON, PA.—Philadelphia Brass Co. will erect $10,000 plant.

PHILADELPHIA, PA.—Davis Bros., Archs., 907 Walnut St., have asked bids for brick and steel, 12-stories, 90 × 210 ft. addition to Ajax Metal Co.'s foundry.——Keystone Watch Case Co., 19th and Brown Sts., has asked bids for brick and steel, 6-story addition to factory.——Wm. H. Cookman, Engr., Broad St. Station, is making plans for brick, 4-story, cold storage warehouse for Quaker City Cold Storage Co.

PHILADELPHIA, PA.—Manufacturing plant American Ice Co., 8th and Catherine Sts., damaged by fire; loss, about $50,000.

PITTSBURG, PA.—Stated that French Metal Co., Paris, France, proposes to establish works near here for manufacturing special grades of tool steel.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

SAYRE, PA.—John F. Donlan, New York, N. Y., has contract for grading for Lehigh Valley car shops. Three buildings are to be erected and machine and boiler shops, 794 x 366 ft., a storehouse, 360 x 103 ft. and power house 300 x 100 ft.

WASHINGTON, PA.—Plans being made by G. Kaufman, 511 Franklin Ave., Brooklyn, N. Y., for brick and steel, 400 x 600 ft., factory for Pennsylvania Air Brake Co.

WILMINGTON, DEL.—Delaware Cement Brick Co., A. Crozier, 810 Broome St., will build addition to plant.

BALTIMORE, MD.—Contract for addition to cost $65,000 to plant of Sharp & Dohne was let to Morrow Bros., 212 Clay St.

CLIFTON FORGE, VA.—Contract for car repair shop of Chesapeake & Ohio R. R. Co. was let to John P. Pettijohn, Lynchburg, Va. Two brick and steel buildings, one 200 x 100 ft., the other 40 x 100 ft. will be erected.

NORFOLK, VA.—Machine shops, warehouses, etc., of Seaboard Air Line were damaged by fire May 22; loss, about $200,000.

NEWPORT NEWS, VA.—American Portland Cement Co., 22 S. 15th St., Philadelphia, will erect brick and steel plant at this place.

SISTERVILLE, W. VA.—Addition to be made to Burt St. shop of Sisterville Boiler Works, E. A. Ryan, owner.

SPRAY, N. C.—210,000 spindle cotton mill projected.

ATLANTA, GA.—Cudahy Packing Co., Omaha, Neb., said to be about to build fertilizer plant here.

ROME, GA.—T. T. Lewis, St. Louis, Mo., may put in new $150,000 furnace at Etna plant.

ANNISTON, ALA.—Contract for $130,000 window glass factory here let to S. R. Smythe Co., Pittsburg, Pa. Three other gas factories proposed; estimated cost of each $75,000. Samuel Rogers is interested.

BIRMINGHAM, ALA.—Stated that Dupont Powder Co., Wilmington, Del., will erect powder works here at cost of $250,000.——Plant of Southern Sewer Pipe Co., destroyed by fire with loss of$150,000, will be rebuilt.

HUNTSVILLE, ALA.—Huntsville Foundry & Machine Works will erect addition to plant soon.

SELMA, ALA.—Cement plant reported for this place.

SHAWS, MISS.—Contract for 40-ton cotton seed oil mill let to W. F. Neal Contracting Co., Greenville, Miss.

MEMPHIS, TENN.—L. M. Weathers, Arch., Cotton Exchange Bldg., is said to have made plans for $85,000 factory buildings for South Memphis; also plans for two cotton oil mills for the Roberts Cotton Oil Co., to be erected at Jonesboro and Batesville, Ark., at a cost of $40,000 each.——The Industrial League, Col. I. F. Peters, Secy., is trying to get two button manufacturing concerns to locate here.

NASHVILLE, TENN.—Packinghouse plants and stock yards, backed by $1,000,000 capital proposed. Wm. K. Phillips is said to be interested.

LOUISVILLE, KY.—M. Q. Wilson, Arch., has building permit for shoe factory on Rowan St., for Conrad-Rawls Co., 5-story, 45 x 190 ft.

AKRON, O.—Wellman-Seavers-Morgan Co., Cleveland, O., are planning for addition to their factory at this place.

AKRON, O.—Lapplin, Rice & Co., may enlarge plant.

CINCINNATI, O.—Tool works, Lodge & Shipley, Springgrove Ave., will be extended.

CINCINNATI, O.—Proctor & Gamble Co., will erect soap factory in Kansas City to cost $1,000,000.

COLUMBUS, O.—J. F. & I. C. Sells are planning to erect 5-story brick factory building.

COLUMBUS, O.—Columbus Brewing Co., will make additions.

LORAIN, O.—National Stove Co. will enlarge plant.

PORT CLINTON, O.—Contract for gypsum mill of Consumers Co., let to Edw. Bertsch for $6,000; equipment will cost $30,000.

SPRINGFIELD, O.—American Seeding Machine Co., Chas. S. Kay, Treas., is considering enlargement of plant.

WELLSTON, O.—Alma Cement Co., B. B. Lethbury, Pres., 1619 Filbert St., Philadelphia, Pa., has asked bids for new plant of 1,500 bbls. daily capacity at this place.

YOUNGSTOWN, O.—Damascus Brake Beam Co., will erect 60 x 200 ft. plant here.

CRAWFORDSVILLE, IND.—D. Grantz & Son. will build addition to City Roller Mill.

ELKHART, IND.—Consolidated Paper & Bag Co., Walter Brown, Pres., will build factory.

LOSGOOTEE, IND.—Z. J. Graham contemplates building glass factory; cost, $14,000.

WASHINGTON, IND.—Knightstown Paper Mill Co., will move plant to this city and erect larger bulding.

DETROIT, MICH.—Puritan Health Food Co., will remodel Argo mills.

DETROIT, MICH.—Parke, Davis & Co. will add 4-story, 470 ft. long, brick and steel laboratory to their plant. Donaldson & Meier, Archs.

DOLLAR BAY, MICH.—$250,000 saw mill here reported destroyed by fire.

MILWAUKEE, WIS.—The National Electric Co., has been organized with $3,400,000 and will take over Christension Engineering Co., and will greatly enlarge and extend plant of last named company. Frank G. Bigelow is interested.

KANSAS CITY, MO.—Missouri Pacific R. R., will build 1,500,000 bushel elevator in the East Bottoms.

KANSAS CITY, MO.—The American Frog & Manufacturing Co., capitalized at $250,000, has purchased the Cookson Manufacturing Co.'s plant and the Kansas City Switch & Frog Works plant in East Kansas City, and is erecting there a complete switch and frog factory, foundry and machine shop. They are now in the market for the equipment necessary for these plants. The company also intends to handle general railway supplies and material.

CAMERON, TEX.—Contract for main building, 68 x 140 ft., for cannery for U. S. Canning Co., let to Joe. Westmoreland.

AUSTIN, TEX.—Contract for sugar mill at state convict plantation, Harlem, was let to Payne & Goubert, New Orleans, La., for $42,500. Piping, foundations, etc., will cost about $15,000 extra.

EVERETT, WASH.—Bay Mill Co. will erect ten block plant, shingle mill.

SALT LAKE CITY, UTAH.—Contract for fireproofing and concrete work for plants of Utah & Idaho Sugar Co. T. R. Cutler, Mgr., was let to Utah Fire Proofing Co., J. P. Hinchman, Pres., for about $40,000.

SEATTLE, WASH.—W. W. Stark and others will construct plant in Olympia for making porch columns. About $50,000 will be invested.

QUEBEC, QUE.—A contract involving $1,000,000 has been let to Michael Connolly by the North Shore Power & Railway Co. The work includes the completion of plant already commenced and takes in pulp factories, wharves and short line of railway.

ST. HYACINTHE, QUE.—Fire in this city destroyed several industrial buildings among which were Cote Brothers shoe factory and the Dupleasis Pegging & Sewing Co.

VANCOUVER, B. C.—Kelly & Barnett will establish distillery here.

MISCELLANEOUS CONTRACTS.

SMELTER.—Arizona.—H. L. Pickett, Silver City, N. Mex., will erect copper smelters in Arizona.

DOCK.—Rossville, N. Y.—Public dock, to cost $9,000, is to be built here.

WHARF, ETC.—Portland, Me.—G. E. Jordan & Co. will build wharf and coal pockets at High St.

CYANIDE PLANT.—Prescott, Ariz.—Braganza Gold Mining Co. proposes to install cyanide plant.

DOCK.—New London, Conn.—Contract for dock at Fort Mansfield let to F. A. Scott Co., New London.

PAVING BLOCKS.—Corona, Cal.—C. S. Borg has contract to cut and quarry 1,000,000 paving blocks.

PUMPING PLANT.—Nevada City, Cal.—The Gold Tunnel Mining Co. will put in modern pumping plant.

STAMP MILL.—Hillsboro, N. M.—Hillsboro Gold Mining & Milling Co. will soon put in a 20-stamp mill.

DRY-DOCK.—Vancouver, B. C.—Vancouver Engineering Works considers erection of large dry-dock here.

MINING MILL.—San Andreas, Cal.—Star of the East Quartz Mine at Rich Gulch will install mining mill soon.

MINING HOIST.—Sumpter, Ore.—Golconda Extension Mining Co., L. V. Swiggett, Mgr., will erect mining hoist.

DREDGING.—Norfolk, Va.—Bids are asked until June 15 for dredging Edenton Bay. (See advertising columns.)

CONCENTRATOR.—Bingham, Utah.—Stated that the Columbia Mining Co., Frank Cook, Mgr., will install concentrator.

STONE WHARF.—Fort McKinley, Me.—Contract for stone wharf here let to P. H. Doyen, Knightsville, Me., for $22,853.

TELEPHONE WORK.—St. Joseph, Mo.—Local plant, Missouri & Kansas Telephone Co., to be improved at a cost of $75,000.

TRAMWAY.—Korskia, Idaho.—Contract for $15,000 tramway for Farmers' Independent Tramway Co. let to Riblet Tramway Co.

VESSELS.—Seattle, Wash.—Pacific Coast Co., J. C. Ford, Mgr., is having plans drawn for two 1,500-ton vessels, to cost $300,000.

FLAGSTAFFS.—St. Louis, Mo.—Bids are asked until June 6 for furnishing 12 75-ft. iron flagstaffs Capt. W. C. R. Colquhoun, Q. M.

CONCENTRATING PLANT.—Tombstone, Ariz.—Reported that Middlemarch Mining Co. is about to spend $50,000 on a concentrating plant.

STAMP MILL.—Excelsior, Wash.—Mount Baker & Shukson Mining Co., Geo. B. Conway, Mgr., may erect 40-stamp mill this year.

AMMUNITION HOISTS.—Boston, Mass.—Bids are asked until June 12 for seven chain ammunition hoists. Capt. Harry Taylor, U. S. Engrs.

FIRE ENGINE, ETC.—San Francisco, Cal.—Fire Department has $16,000 for apparatus and will probably buy two engines and two trucks.

LEVEE.—Covington, Ind.—Bids are asked until June 6 for levee on east bank of Wabash River in Fulton and Wabash. S. L. Wilkins, Dir. Levee Dist.

DREDGING.—Baltimore, Md.—Bids are asked until June 22 for dredging in Patapsco River. Lieut.-Col. Chas. J. Allen, U. S. Engrs. (See advertising columns.)

DISINFECTING STATION.—New York, N. Y.—Bids are asked until June 13 for disinfecting station on pier at 132d St. Ernest J. Lederle, Pres, Bd. Health.

PIER HEAD, DREDGING.—Portland, Me.—Bids are asked until May 29 for constructing pier head and dredging at Fort Preble, Me. Capt. A. W. Yates, Q. M.

DRY DOCK.—Manitowoc, Wis.—Manitowoc Dry Dock Co. is figuring on a dry dock 450 ft. long, 60 ft. wide, with 18 ft. of water over miter sills. The cost is $80,000.

DREDGING.—Boston, Mass.—Bids are asked until June 4 for about 15,000 cu. yds. dredging. Woodward Emery, Harbor and Land Comr. (See advertising columns.)

WATER POWER CANAL.—Bangor, Me.—P. H. Coombs, C. E., has been making plans for introducing a stone masonry lining to the canal of the Newport Woolen Co.

RIVER STRAIGHTENING.—Brockton, Mass.—C. R. Felton, Cy. Engr., has been making plans for straightening the Salisbury River and improving Salisbury Valley.

COAL MINING.—Pittsburg, Pa.—The Indianola Coal Co. has arranged to spend $700,000 in opening 10,000 acres of coal land near Harmarville. Six mines are to be operated.

DRY DOCK.—Port Huron, Mich.—Columbia Iron Works is getting out plans for 550 ft. long, 80 ft. wide dry dock. The company will build four ships and is figuring on others.

MINING EQUIPMENT.—Spokane, Wash.—Tempest Mining Co. will expend $75,000 in equipping Tempest Mine. Ten-stamp mill, compressor and electric plant will be put in.

LIGHT STATION.—Mobile, Ala.—Bids are asked until June 26 for construction of Sabine Bank Light Station, Tex. Capt. Wm. E. Craighill, U. S. Engrs. (See advertising columns.)

BREAKWATER EXTENSION.—New London, Conn.—Bids are asked until June 22 for extending breakwater at New Haven, Conn. Maj. Chas. E. Powell, U. S. Engrs. (See advertising columns.)

BROOK IMPROVEMENT.—Syracuse, N. Y.—Reported that bids are asked until June 1 for changing course of Harbor Brook, $11,000 being available for this work. Frank J. Schnauber, Cy. Engr.

CONCENTRATOR.—Spokane, Wash.—Salmon River Mining Co. will install concentrator and other machinery; $21,000 will be spent for these and development work. R. A. Hutchinson is interested.

EXTENDING BREAKWATER.—Grand Rapids, Mich.—Bids are asked until June 24 for extending West breakwater at Petoskey, Mich. Lieut.-Col. M. B. Adams, U. S. Engrs. (See advertising columns.)

BOAT WAGONS.—Washington, D. C.—Bids are asked until May 29 for constructing 30 boat wagons, 25 of which are to be furnished with runners. Horace L. Piper, Gen. Supt. U. S. Life Saving Service.

BOARD WALK, BULKHEADS ETC.—Cape May, N. J.—Contract for new board walk and bulkheads and portion of sewer extension let to Dietrich & Bowser, 935 N. 7th St., Philadelphia, for $175,000.

CANAL.—Birmingham, Ala.—The Warrior Navigation Co., formed by J. A. Van Hoos and others to further building of canal from this city to Warrior River, 30 miles distant, at cost of $7,000,000.

SUBWAYS.—Binghamton, N. Y.—S. E. Monroe, Cy. Engr., has reported that subways for wires can be built for $42,600 per mile. About 16,687 ft. of these would be required at a total cost of $134,664.

DITCH FLUME, MASONRY.—Utah.—Glenn's Ferry Land & Irrigation Co. has let a contract to Slick Bros., Provo City, Utah, for a ditch flume and masonry work, which involves expenditure of $361,000.

GUNBOAT.—Washington, D. C.—Contract for one gunboat, bids for which were opened May 18, has been let to Gas Power & Engine Co., Morris Heights, N. Y. Bids will be called again for the other boat.

NAVAL SUPPLIES.—Washington, D. C.—Bids are asked by Bureau Supplies and Accounts, Navy Dept., until June 9 for furnishing machine tools, motors, ladles, anvils, locomotives, boilers, etc., to various navy yards.

COAL LAND DEVELOPMENT.—New York, N. Y.—The Federal Coal & Coke Co. has purchased 5,000 acres of coal land in Taggert Valley, W. Va., and will develop same; 500 coke ovens will be constructed at once.

CONDUIT, ETC.—Colorado Springs, Colo.—E. W. Case, Cy. Engr., has been making plans for conduits on Cucharas St., and Nevada Ave., and Constilla St., to cost $7,000, and for a retaining wall at Tejon St., to cost $3,000.

LIGHT HOUSE SUPPLIES.—Tompkinsville, N. Y.—Bids are asked until June 24 for furnishing miscellaneous articles required by light house establishment for one year. Maj. William T. Rossell, U. S. Engr. (See advertising columns.)

U. S. POSSESSIONS AND CUBA.

GAS AND ELECTRICAL CONDUITS.—Honolulu, H. I.—Lord & Belser, general contractors, Box 192, Honolulu, want information and data regarding gas and electrical conduits.

COALING STATION.—Alaska.—Admiral Dewey, Pres. General Board, has recommended to Secy. of Navy Moody the establishment of a coaling station at Dutch Harbor, Alaska, at an estimated cost of $51,000. The plan is approved and will be carried out immediately. The money is available.

MILITARY POST.—Manila, P. I.—A new military post will be established near Manila to accommodate one brigade of troops. Col. Miller, Ch. Q. M., has been instructed to call for bids for 8,000,000 to 10,000,000 ft. of lumber, to be sent from the United States. About 70 buildings will be put up.

BRIDGES.—Honolulu, H. I.—The following bills have passed the House carrying appropriations for bridges at the various points named: Makawao, $7,050; Wailuku $4,300; Lahaina, $3,625; Molokai, $1,250; Oahu, $1,125; Kaolaulea, $2,325; Honolulu, Fourth District, including Nuuanu, $66,000, and fifth district, $50,000; Waimea, $1,250; Hoea Gulch, $10,000; Lihue, $3,875; stone bridges, $2,000; Koloa, $1,884. Various other appropriations have also been acted favorably upon at Washington, included in which is a considerable sum for road and bridge work.

MEXICO.

ELECTRIC TRACTION.—San Luis Potosi.—The San Luis Electric Light Co. is considering the building of a system of electric railways here.

ELECTRIC TRAMWAY.—San Luis Potosi.—The San Luis Potosi Electric Light Co. is making efforts to contract for a system of electric tramways in this city.

RAILROAD.—Saltillo.—Salvador Pena and Rafael Davila, of Saltillo, have obtained a concession for a railroad from Allende to Zaragoza, to be a narrow gage line.

BRICK PLANT.—Monterey, Mex.—A plant is to be built by the Pan-American Pressed Brick Co., San Antonio, Tex., for the manufacture of brick from sand and lime by the "System Huennekes."

BUILDINGS.—City of Mexico.—The Jockey Club, of this city, will erect a stone and steel grand stands and other necessary buildings at its race course here. General Mena, Minister of War, can give information.

WATER SUPPLY.—Torreon.—Deep wells are being sunk adjacent to the Nazas River preparatory to obtaining for this city an abundant supply of water. Mackin & Dillon, Monterey, have contract for establishing water-works and sewer systems.

COAL DEPOSITS.—Chihuahua.—It is announced that the coal deposits situated near the Concho River, this state, near the route of the Kansas City, Mexico & Orient R. R., are to be developed on an extensive scale by E. A. Stilwell, of Kansas City, Mo., Pres. of that road, and associates.

WATER SUPPLY.—State of Durango.—Cities of Gomez, Palacio and Lerdo are to be provided with an additional supply of water which is to be brought by canal, being constructed from the River Nazas. Dodson & Co., of Torreon, Mex., can give information, although not directly interested.

STOCK YARDS.—Mexico City.—James P. Taylor, Mexico City, representing W. J. Alexander, has received from the government a concession for building stock yards within the limits of the federal district, with a capacity to accommodate 5,000 cattle, 10,000 hogs, 5,000 sheep and goats and 1,000 horses, together with buildings for offices, dwellings, etc. The yards and accessories must be completed within five years, and $300,000 will be invested in the project.

POWER PLANT.—Durango.—P. E. Stahlknecht, Secy. and Mgr. Compania Hidro-Electrica, Durango, writes us that preliminary estimates have been furnished by Siemens & Halske, Mexico City, and by the Mexican General Electric Co. for the construction of its plant in this city. Company will develop 800 HP. for lighting and power purposes, supplying 8,000 16-c. p. lamps; about $800,000 Mex. will be invested. Contractsc will be let about the end of the year.

WATER-WORKS.—Leon.—A correspondent informs us that the state government has taken steps looking to the establishment of a complete system of water-works for this city, in which $500,000 will be expended. Plans contemplate a dam near this city which will form a reservoir with a capacity of 1,000,000 cu. ft. of water. In addition several artesian wells will be bored. Three of these have already been bored at a cost of $20,000. Dam estimated to cost $275,224. Complete system of water mains and pipes will be laid throughout the city; pop., about 80,000. For further information address: "El Gobernador," Leon, state of Guanajuato.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

FOREIGN CONTRACTS—EXPORT NEWS.

DRY DOCK.—Christiania, Norway.—New dry dock, 500 ft. long, 73 ft. wide and 30 ft. deep, costing about $82,400, will be constructed in Pusuoes Bay, on Tromo.

ELECTRIC TRACTION.—Isle of Man.—Robt. W. Blackwell & Co., engineers and contractors, London, Eng., have secured the contract for feeder lines for the electric traction system on this island.

BRIDGES AND ROADWAYS.—England.—Bids will be received by E. Foulkes-Jones, Hon. Secy. King's Bridge Com., Llangollen, until June 12, for constructing bridges and roadways at Berwyn.

DRAINAGE WORKS.—Uruguay.—The Government has accepted the bid of Senor V. Scala, the representative of a Buenos Ayres firm, for constructing a system of sanitary drainage in the port of Montivideo. His bid was for about $155,000.

RAILWAY.—Asiatic Turkey.—The Turkish Government has bought a British concession for a line of railway from Haifa to Damascus. It is intended to build a railway through Galilee to Mzerib, by way of Beisan. Estimated cost of a 40-in. gage road, $2,000,000.

PIPE LINE.—Roumania.—Minister Jackson, of Athens, reports that the Roumanian Parliament has appropriated $96,500 for preliminary work connected with the building of a pipe line from Campina, in the petroleum district, to Constanza, on the Black Sea, crossing the Danube by the railway bridge at Gernavoda.

GAS SUPPLY.—Paris, France.—The Gas Committee of the Municipal Council has adopted the report of the Prefect of the Seine rejecting the Devaluez-Duchanoy proposal to supply Paris with gas on the ground that it is impossible to supply gas at the price proposed and for insufficient guarantee. The plan is backed by Americans.

RAILWAY.—Spain.—Concession granted the Nasco Asturiana Ry. Co. for narrow gage line from La Penona on line from Ujo to Frubia to the Pepita and Dolores mines. ——Work has been started on the line of the Vasco-Castellana Co.'s double line from Bilbao to Burgos, 125 miles. British contractors are doing the work. Company has concessions from Burgos to Madrid, which will bring these points 90 miles nearer each other. Surveys on this road now under way.

TUNNEL.—France.—Thornwell Haynes, U. S. Consul at Rouen, reports that work will soon start on a tunnel under the Seine River either at Taucarville or Quillebeuf. Jean Berlier, Engineer, 35 rue Boissy d'Anglas, Paris, was engaged by the chambers of commerce last year to make preliminary investigations as to the feasibility of such a work. He advised carrying out the plan and estimated the cost at $5,905,800. According to the estimate the work could be carried out in three years with an equipment costing $231,000.

RAILWAY.—Nicaragua.—Final organization of the Great Central Ry. effected with Robt. Pitcairn, Pres. Wm. M. Rees, Secy. and Treas. and James Dietrick, Managing Director, of Pittsburg, Pa. Company is capitalized at $10,000,000, and will build and equip a road in northern Nicaragua to connect the capitals of San Salvador, Honduras and Nicaragua with the head of navigation on the Coco River, 200 miles from its mouth. Engineers are in the field under John McCall locating the line, which will be some 320 miles long.

RAILWAY.—Southeast Africa.—W. Stanley Hollis, U. S. Consul, at Lorenco Marquez, reports under date of March 16 that the construction of Portuguese end of the Swaziland R. R. has been authorized; the funds appropriated by the Lisbon Government, and work will commence June 1. Surveys have not yet been made, but will start from Matolla, 16 miles from Lawrence Marquez, on the Delagoa Bay R. R., and running in a westerly direction to the frontier of the Transvaal. The Transvaal Government has assured the Portuguese Government that the line will be continued from the frontier to Ermelo, about 160 miles in a straight line from Matolla. From Machadodorp a private corporation will build to Ermelo. The Central South African Ry. conference at a recent meeting allotted $25,000,000 for railway extension in the Boer states, and set aside $4,705,905 for constructing and equipping a line from Springs to Ermelo, 137 miles, on which work will begin immediately.

CONTRACT PRICES.

[Where (*) precedes items under Contract Prices the work was advertised in Engineering News.]

(*) PAVING.—North Adams, Mass.—Following bids received May 21 for 4,000 sq. yds. brick paving, 1,500 sq. yds. granite paving and 1,500 lin. ft. of curbing: H. C. Wood & Co., granite block, per sq. yd., $4.05; Porter block, $2.45; setting new curb, 35 cts. Miles Febr Co., Easton, Pa., Mack $2.61; Porter $2.52; curbing 45 cts. Frank Pidgeon, New York, granite, $3.80; Porter, $2.57; Montello, $2.55; curbing, 40 cts. Troy Public Works Co., Utica, N. Y., granite, $3.75; Porter, $2.75; curbing, 35 cts.; W. N. Flint Granite Co., Monson, granite, $3.80; curbing, 36 cts. M. Fitzgerald, Hoosick Falls, N. Y., medium sandstone, $5.63; Porter, $3.59; McEvoy $3,69; Mack, $4.25; Williams, $3.70; curbing, 22 cts.

(*)PAVING.—Geneva, N. Y.—W. S. Wood, Secy. Bd. Pub. Wks., informs us that the following bids were received May 14 for paving Wadsworth, Bradford and Lake Sts., and a part of Poultney St.; contract awarded to F. A. Malette for laying tar macadam on Poultney and Lake Sts., at a total cost of $28,149; R. W. Henson awarded contract for Metropolitan block pavement on Wadsworth St., $4,353; action on Lake road and Bradford St. pavement deferred:

Bids Received at Geneva, N. Y., May 14, 1903, for Paving in Several Streets.

Items.	F. A. Malette, 9 Sherrill St., Geneva.	Barber Asp. Pavg Co., Utica.	R. W. Henson, Geneva.	Eastern Const'n Co., Buffalo.	Thos. Fitzgerald, Jr., Fredonia.	Warner-Quinlan Asphalt Co., Syracuse.
Excavation, a cu. yd.	$0.55	$0.50	$0.30	$0.50	$0.38	$0.45
Curb, a lin. ft.	.70	.62	.65	.70	.655	.75
3-in. drain tile, a lin. ft.	.12	.05	.07	.15	.12	.10
12-in. sewer tile, a lin. ft.	.60	.55	.60	1.00	.68	.80
Protection curb, a lin. ft.	.60	.48	.60	.60	.60	.50
Catchbasins	35.00	62.00	30.00	40.00	30.00	50.00
Inlets	20.00	10.00	20.00	35.00	20.00	25.00
Asphalt pavement, a sq. yd.	1.975	1.77	.....	1.90	.....	2.21
Tar macadam	1.69	....	...	....	....	....
Mack block	....	....	....	....	2.23	....
Metropolitan block	2.21	....	2.04	2.20	....	....
Total	$52,187	$53,325	$57,931	$59,041	$61,806	$47,054

PAVING.—Seattle, Wash.—The board of public works received the following bids on May 1, for paving First Ave.: (1) concrete; (2) asphalt; (3) brick; (4) maintenance: Stirrat & Goetz, (1) $1.30 per yd.; (2) $2.55; (3) $3; (4) 7 cts. per yd. per yr. A. J. Raisch, (1) $1.26; (2) $2.80, (3) $2.80; (4) 5 cts. Barber Asphalt Co., (1) $1.40; (2) $2.50; (3) $2.90; (4) 3½ cts. F. McLellan, (1) $1.25; (2) $2; (3) $3; (4) 3 cts.

PAVING.—Boise, Idaho.—The Barber Asphalt Co. received the contract for paving Main and 10th Sts. with asphaltum on concrete foundation at $2.65 per sq. yd.

SEWER AND PAVING.—Davenport, Ia.—The People's Construction Co., received the contract for sewering Fifth St. and Rock Island Ave., at $1.25 per sq. yd.; and also for some paving work at 36 cts. for excavation and $1.46 for brick paving.

LAYING WATER MAIN.—Grand Forks, B. C.—George Chappel awarded contract for laying 12,500 ft. of water main at 26 cts. per lin. ft.

(*)SEWERAGE SYSTEM.—Quincy, Mass.—The Sewer Dept., E. W. Branch, Engr., received the following bids May 18 for constructing the sewerage system:

Bids Received at Quincy, Mass., May 18, 1903, for Constructing Secs. 11 and 12, of Sewerage System.

Section 12.

Quantities.	Eglee, Bunting Co., 120 Milk St., Boston.	Wm. J. McCarthy, 27 Bonair St., Somerville.	C. E. Trumbull Co., Tremont Bldg., Boston.	H. A. Hanscom Co., 53 State St., Boston.	T. J. O'Connell, Dorchester.	Jas. H. Ferguson, 22 Parkman St., Dorchester.
Earth excavation, 0 to 8 ft. .... 3,250 cu. yds.	$0.95	$0.60	$0.80	$1.00	$0.75	$0.75
" " 8 " 14 " .... 2,200 " "	1.50	1.50	1.50	1.50	1.10	1.00
" " 14 " 20 " .... 1,100 " "	2.50	2.80	2.00	1.50	1.50	1.50
" " below 20 ft.... 250 " "	3.00	3.00	2.50	2.00	2.00	2.00
Rock excavation, 0 to 8 ft.... 50 " "	3.50	4.00	3.50	.10	4.50	4.50
" " 8 " 14 " .... 50 " "	6.00	5.50	4.50	.10	6.00	6.50
" " below 14 ft.... 50 " "	8.00	7.00	7.00	6.00	8.00	8.50
Brick masonry ..... 100 " "	6.00	4.00	5.00	6.00	5.25	6.50
Concrete masonry ..... 175 " "	5.00	5.00	4.00	6.00	4.00	4.50
Laying 8 and 10-in. sewer pipe. 760 lin. ft..	.25	.20	.30	.20	.15	.25
" 15-in. sewer pipe ..... 1,070 lin. ft..	.35	.25	.40	.35	.20	.30
" 18 and 20-in. sewer pipe 1,152 " "	.45	.35	.50	.40	.30	.40
" underdrain ..... 2,500 " "	.05	.35	.20	.20	.30	.05
" chimneys ..... 500 " " "	.10	.30	.10	.10	.15	.15
Lumber in place and secured..10,000 ft..B.M.	30.00	40.00	35.00	40.00	45.00	40.00
Paving around manholes..... 25 sq. yds.	.50	2.00	.50	3.00	....	2.00
Total	$13,808	$13,478	$12,820	$12,672	$11,106	$10,822

Section 11.

Quantities.	H.A. Hanscom Co.,	Eglee-Bunting Co.,	C.E. Trumbull Co.,	T.J. O'Connell Dorchester.
	Boston	Boston	Boston	Dorchester.
Excavation:				
Earth, 0— 8'. 3,750 yds.	$1.00	$0.95	$0.80	$0.70
" 8—14'. 1,500 "	2.00	1.50	1.50	1.00
" 14—20'. 750 "	3.00	2.50	2.00	1.50
" below 20' 150 "	5.00	3.00	2.50	2.00
Rock 0— 8'... 50 "	4.00	3.50	3.00	4.50
" 8—14' . 50 "	5.00	6.00	5.00	6.00
" below 14' 50 "	6.00	8.00	8.00	8.00
Earth in tunnel 265 ft...	12.00	7.00	8.00	11.00
Rock in tunnel. 50 "	18.00	17.00	18.00	19.00
Brick masonry .. 75 yds.	6.00	5.00	5.00	5.25
Concrete masonry 300 "	7.00	4.00	4.25	4.00
Laying 20" pipe. 3,720 ft...	.50	.60	.60	.30
Underdrain .... 3,720 "	.25	.10	.05	.30
Chimneys ..... 200.....	.20	.10	.10	.15
Lumber, placed.. 10 M. ft	40.00	40.00	40.00	45.00
Total	$20,360	$16,317	$15,433	$14,494

(*)PAVING.—Charlottesville, Va.—De Mott & Winfree, Consult. Engrs., Lynchburg, inform us that the following bids were received May 19, 1903, for 30,000 sq. yds. of paving: (1) bid Warren Bros. Co., Boston, (2) Charles Gasser, Richmond, Va., who also bid $1.35½ per sq yd. for 30,000 sq. yds. granite pavement; the total in which this bid was included was $111,228; (3) Pfaff, Ringwald & Smith, Chillicothe O., using Porter paving blocks for the 30,000 yds. of brick pavement the price is $1.65 per yd., total, $85,335; using Mack block it is $1.80, total, $89,832, the bid given below is for Peebles block:

	1.	2.	3.
Excavation .....30,000 cu. yds.	$0.30	$0.38	$0.35
Vitrified brick .....30,000 sq. yds.	2.08	1.735	1.57
Bitum. macadam ..30,000 " "	1.93	....	....
Concrete base ..... 3,000 " "	....	.75	.20
Stone macadam ....40,000 " "	....	.63	.13
New macadam .....15,000 " "	....	.97¾	.32
Curbing .....22,000 lin. ft..	.44	....	.38
Curbing reset ..... 7,000 " "	.20	.22	.10
Circular curb corners 250 each...	.60	....	2.50
Concreting ..... 7,000 " "	1.68	.82	.65
4-in. tile drains ... 5,000 " "	.05	.16	.10
Total	$90,823	$122,638	$82,935

(*)SEWERS.—Amsterdam, N. Y.—F. E. Crane, Supt. Sewers, received bids May 20 for constructing sewers for which contract were awarded as follows: East Main St., Eveline Contracting Co., Waterford, 250 ft. 27-in. pipe, $6.85 per lin. ft.; 300 ft., 18-in., $4.80; 24-ft., 15-in., $3.35; two manholes, $60 each; catchbasin, $100; 15 connections, $5; total, $3,541. Guy Park Ave., A. Pantelone, Amsterdam, 500 ft. of 15-in. pipe, $2.75 a lin. ft.; 500 ft., 8-in., $2.25; manhole, $50; flushtank, $75; one I. P., $6; two catchbasins, $80 each; total, $2,788. Milton Ave., A. Pantelone, 820 ft., 15-in., 92 cts.; two manholes, $40; four catchbasins, $53 each; total, $1,046.

PAVING.—Cedar Rapids, Ia.—Snouffer & Ford were the lowest bidders for paving Fifth Ave. at the following prices, paving, $1.31½; extra macadam, $2.95; cement curb, 42 cts.; grading, 28 cts.; drain tile, 18 cts.; extra sand, $1.25; resetting curb, 10 cts.

(*)PAVING.—Walden, N. Y.—Jas. T. Young, Village Clk., informs us that the following bids were received May 20, 1903, for 4,000 sq. yds. of brick paving on Main St.: Irregular bids—Dwyer & Sager, Clearfield block, $2.74 a yd.; Theo. H. Allen & Co., Mack block, $2.32; Hornellsville block, $2.08; Miles-Febr Contracting Co., Metropolitan block, $2.43; (1) Dwyer & Sager, Newburgh, (2) Frank Pidgeon, Saugerties; (3) Miles-Febr Contracting Co., Easton, Pa.; (4) John H. Hasbrouck, Newpaltz, N. Y.; (5) Theo. H. Allen & Co., Oneida:

	1.	2.	3.	4.	5.
Porter block	$2.58	$2.30	$2.43	$2.00	$2.08
Porter wire-cut block.....	2.53	2.29	....	....	....
Montello block	2.58	2.29	2.40	....	....
Resetting curb a lin. ft...	.10	.16	.20	.05	.08
Excavation, a cu. yd.....	.40	.50	.45	.40	.40
4×20-in. curb in place...	.45	.78	.65	.42	.47
Retaining curb set, a ft...	.05	.20	.60	.08	.07

BRIDGE.—Astoria, Ore.—C. J. Trenchard, County Judge, writes that the contract for a $2,000 bridge at Sea Side was let May 6 to L. Lebeck at $19.75 per M. ft., B. M., for lumber used.

(*)DREDGING.—Norfolk, Va.—For dredging Nansemond River, the following bids were received May 25: Smith & Robinson, 8 Bridge St., 24½ cts. per cu. yd., scow measurement; Norfolg Dredging Co., Norfolk, Va., 49½ cts.

JETTY.—Galveston, Tex.—The bid of J. M. O'Rourke & Co. for repairing the Galveston jetties has been finally accepted. The figures were $2.59 per ton for rock weighing between 5 and 7 tons, and $3.89 per ton for 10 to 12 tons.

INDUSTRIAL NOTES.

THE MASURITE EXPLOSIVE CO., has removed its offices from 50 Broadway to Masury, Ohio; post office box 144, Sharon, Pa.

THE HARPER MACHINERY CO., Park Row Bldg., New York, has succeeded to the business of the Grant & Harper Machinery Co., dealers in new and second-hand machinery.

THE BUREAU OF EXPERT INVESTIGATION AND CONSTRUCTION, 35 Nassau St., which was referred to in this column in our issue of May 14, was organized by Mr. James B. Cahoon, M. Am. Soc. M. E., M. Inst. Elec. E., and his name should be added to those of the mechanical and electrical engineers mentioned as connected with the bureau.

THE INDEX OF THE TECHNICAL PRESS, Brussels, Belgium, has removed to 20 rue de la Chancellerie, Brussels. A. L. Vermandel and M. Fitzpatrick, Mech. Engrs., are in charge.

THE EXPANDED METAL ENGINEERING CO., 256 Broadway, New York, successors to the N. Y. Expanded Metal Co., has been formed for the purpose of engineering and trading in all that pertains to the extension of the use of steel reinforced concrete and plastic cement work.

IRA E. STEVENS, 303 Dearborn St., Chicago, has taken up the business of mining and colliery machinery and equipment. He has the agency for the mine haulage and ventilating machinery of the Robinson Machine Co., and for the car-loading machines at the Ottumwa Box Car Loader Co.

J. HOLT GATES & CO., 1436 Monadnock Bldg., Chicago, have taken the agency of the Skinner Engine Co., of Erie, Pa. They are also acting as representatives of the Quincy Engine Co., of Quincy, Ill., for large Williams vertical cross-compound engines. This firm is now in a position to erect complete steam and electric plants.

THE M. GARLAND CO., Bay City, Mich., has shipped to Herkimer, N. Y., a carload of saw mill machinery, including a five saw Garland Gang Edger, having two stationery and three movable saws. The edger is equipped with two movable side guides, and two Garland's Patented Power chain guides. This chain guide is especially useful for edging hardwood lumber. Warped and crooked boards are engaged and carried through perfectly straight.

THE AMERICAN BLOWER CO., Detroit, Mich., reports among the larger orders recently received the heating and induced draft apparatus for the Ironton (O.) Engine Co.; drying outfits for the Ill. Sugar Refining Co., Pekin, and the Mich. Starch Co., Traverse City; dry kiln for the Mengel Box Co., Louisville, Ky., Brooklyn Cooperage Co., of New York; Buckstege Furniture Co., Evansville, Ind.; Evansville (Ind.) Desk Co., Cadillac Cabinet Co., Detroit.

THE PNEUMATIC SIGNAL CO., New York, has purchased from S. Marsh Young, owner of the Young system of automatic electric track circuit block signals for electric railways, all his rights for the U. S., Can. and Mex., and will arrange to place the system at once on the market. The Young system furnishes the same measure of protection for electric lines as the standard track circuit system does on steam roads. The presence of any pair of wheels on the block section, a broken rail or wire, or an open switch results in a danger signal. The signal company will organize an electric railway department, which will be in charge of Mr. Young, who was one of the incorporators and first Vice-Pres. Hall Signal Co., and for some years the Vice-President and General Manager of the Manhattan General Contruction Co. until he sold the company to the Westinghouse interests. The Pneumatic Signal Co.'s factory has been until recently at Troy, but it has now moved into the new works at Rochester, N. Y. This plant covers about 240,000 sq. ft. The system by which this company is best known is its low-pressure pneumatic system for interlocking and block signals on steam railway lines and is used extensively in Europe and America. Its entering the street railway field is a new departure, and it is the intention to bring all its experience in the field of steam railway signaling to bear upon the several problems which are confronting the management of high-speed electric lines.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

90,000 YDS. OF STREET PAVING.

Shreveport, La., May 22, 1903.

Sealed proposals will be received by the City Comptroller at the City Hall up to 6 o'clock p. m., June 26, 1903, for the Paving of the following streets in the City of Shreveport, La.:

No. 1—Marshall St., Crockett to Davis; approximate square yards..... 9,756.5
No. 2—Louisiana St. and Ave., Lake to Jordan; approximate sq. yds... 16,453.1
No. 3—Western Ave., Sprague to Hope; approximate sq. yds..... 2,204.8
No. 4—Hope St., Western to Texas; approximate sq. yds..... 7,473.4
No. 5—Texas Road, Cedar to corporation line approximae square yards.... 12,159.9
No. 6—Southern Ave., Jordan to Dasheil; approximate square yards..... 4,418.7
No. 7—Cotton St., Marshall to Texas Ave; approximate square yards..... 7,212.3
No. 8—Commerce St., Cotton to Lake; approximate square yards 5,927.9
No. 9—Caddo St., Market to alley rear Ardis & Co.; approximate sq. yds.. 2,427.2
No. 10—Tannin St., Market to Commerce; approximate square yards..... 3,084.9
No. 11—Stower Ave., Louisiana to cemetery gate; approximate sq. yds... 11,273.1
No. 12—Irving Place, Jordan to Olive; approximate square yards..... 6,851.5

The paving to be of brick or brick and asphalt, or Warren Bros.' Bitulithic Pavement as per plans and specifications on file in the Engineer's Office.

Each street to be bid on separately, and all bids must be made on and in accordance with special blanks furnished by the City Engineer under whose supervision all work will be done.

A certified check equal to 10% of the amount bid to accompany each bid as a guarantee that bidder, if successful, will furnish satisfactory bond and enter into contract as per his bid.

A maintenance bond of 10% of contract as bid will be required of successful bidders for maintenance of work for five years.

The City reserves the right to reject any and all bids.

C. G. RIVES,
22-4t Comptroller.

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR PAVEMENT ON FAYETTE ST.

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving Fayette St., from Court to Henry St., in accordance with the specifications prepared by the City Engineer, and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton until 5 o'clock p. m. June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids.

I. C. HULL,
22-2t City Clerk.

WATER-WORKS AND ELECTRIC LIGHT BONDS.

Clayton, Ala., May 14, 1903.

The Town of Clayton will receive bids until Saturday, June 13, 1903, for the sale of Twenty Thousand Dollars of Municipal Electric Light and Water-Works Bonds. A certified check of Five Hundred Dollars must accompany each bid. The town reserves the right to reject any and all bids.

For particulars and information concerning said bonds, apply to

J. S. WILLIAMS, Mayor.
J. J. WINN, JR., City Clerk. 21-4t

ENGINEER OFFICE, U. S. Army, Room 2, Custom-House, Norfolk, Va., May 15, 1903.—Sealed proposals for Dredging Edenton Bay, N. C., will be received here until 12 m. June 26, 1903, and then publicly opened. Information furnished on application. 22-2t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., May 25, 1903.—Sealed proposals for Extension of West Breakwater at Petoskey, Mich., will be received here until 3 p.m., June 24, 1903, and then publicly opened. Information furnished on application. M. B. [illegible]

SEWERS AND DRAINS.

Ridgefield Park, N. J.

Sealed proposals will be received by the Board of Trustees of the Village of Ridgefield Park, in the County of Bergen and State of New Jersey, for the construction of Sewers and Drains along and through the following roads, streets and avenues:

Bergen Turnpike, from Teaneck Road to Elm St.;

Teaneck Road, from the Bergen Turnpike northerly to the southerly end of the completed sewer in said Teaneck Road;

Maple St., from the Bergen Turnpike northerly to the end of sewer in such street, as shown upon the map of such sewers on file with the Village Clerk, and being within one hundred (100) feet, more or less, of Elm St.;

Oak St., from the Bergen Turnpike northerly to the end of the sewer in such street, as shown by the aforesaid map, and being within one hundred (100) feet, more or less, of Elm St.;

First St., from the Teaneck Road westerly to within one hundred (100) feet, more or less, of Central Ave.;

Second St., starting within one hundred (100) feet, more or less, from Teaneck Road and extending westerly to within one hundred (100) feet, more or less, of Central Ave.;

Teaneck Road, from First St. to Third St.;

Also for the extending and lengthening out of the outlet to Sewer System Number Three (3) at Ridgefield Ave., and

Also for the extending and lengthening out of the outlet to Sewer System Number Two (2) at North St.

Specifications and the form of proposals may be obtained and plans and profiles seen at the residence of John W. DeGroat, Chairman Sewer Committee, corner First St. and Bergen Ave., in Ridgefield Park, N. J. The bidders shall carefully examine the specifications and profiles and will be required to bid on all items mentioned in the specifications. All bids to be sealed and properly endorsed and to be in the hands of the Village Clerk on or before the first day of June, A. D. Nineteen Hundred and Three, at eight o'clock p. m. The bids will be opened at a meeting of the Board of Trustees of the Village of Ridgefield Park, N.J., in the Hose House, on Mount Vernon St., on the first day of June, A.D. Nineteen Hundred and Three, at eight o'clock p. m. All bids must be accompanied by a certified check on a National Bank to the order of the Board of Trustees of the Village of Ridgefield Park, for one thousand ($1,000) dollars, or by that amount in cash, to guarantee the good faith of the bidder, and that he will enter into a contract for such work if awarded to him, and upon neglect or refusal to enter into such contract, such deposit shall be forfeited absolutely to the Village of Ridgefield Park.

The right to reject any or all bids is hereby reserved.

JOHN L. OBERG,
Attest: President.
CARL HALLBERG, Village Clerk. 21-2t

STONE AND GRAVEL ROAD.

Monmouth County, N. J.

Sealed proposals will be received by a committee of the board of chosen freeholders of the County of Monmouth, at the court house in Freehold, N. J., on Monday, June 15, 1903, until 10 o'clock a. m., and then publicly opened, for the construction of a stone and gravel road, under the state aid act, four and one-half miles in length, on Corlies Avenue, from West Grove to Hamilton, in the Township of Neptune, in said County. Each bidder must accompany his bid with a certified check for one thousand dollars ($1,000), made payable to the director of the board of chosen freeholders of said County, as a guarantee that if said contract is awarded to him, he will, when required by the board, execute an agreement in writing to faithfully perform the work according to the plans and specifications. All proposals must be made on the blank form furnished for that purpose. Plans can be seen at the office of the Engineer, W. H. DeNyse, 164 Broadway (Post Office Building), Long Branch, N. J. Specifications and blank forms of proposals can be obtained from the County Collector, Freehold, N. J., or of the engineer.

The right to reject any or all bids is reserved.

JOHN GUIRE,
Director Board of Chosen Freeholders, Long Branch, N. J. 22-3t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 14, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 18th day of June, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post Office at Boone, Ia., in accordance with drawings and specifications, copies of which may be had at this office or the office of the Postmaster at Boone, Ia., at the discretion of the Supervising Architect. JAMES [illegible]

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR PAVEMENT ON FRONT ST.

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving Front St., from Prospect St. to the City limits, in accordance with the specifications prepared by the City Engineer and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton, until 5 o'clock p. m., June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids.

I. C. HULL,
22-2t City Clerk.

BRICK, BLOCK, ASPHALT AND MACADAM PAVING.

Rensselaer, N.Y., May 22, 1903.

Sealed proposals will be received by the Common Council at the office of the City Clerk until 8 o'clock p.m., June 16, 1903, for the Grading and Paving with Brick, Granite Blocks, Asphalt and Bituminous Macadam Waterproof Pavement and furnishing and setting Granite Curb, building new Catch-basins and repairing old ones, and all other work which may be necessary to complete the proposed improvements on Second Ave., Columbia St., Broadway, Third St., Fowler Ave., and Fourth St., according to plans and specifications on file in the City Clerk's Office or in the office of C. A. Roemer, Engineer, 508-509 Cannon Place, Troy, N. Y.

The approximate amount of paving is 34,509 cu. yds.

The approximate amount of curbing is 19,307 lin. ft. 22-1

C. A. ROEMER, City Engineer.

COMMONWEALTH OF MASSACHUSETTS.
METROPOLITAN WATER AND SEWERAGE BOARD.

BUILDING ROAD.

Sealed proposals will be received at the office of the Metropolitan Water and Sewerage Board, 1 Ashburton Place, Boston, Mass., until 2:30 o'clock p. m. of Wednesday, June 10, 1903, for building a road at the Wachusett Reservoir in West Boylston, Mass. The quantity of earth excavation is approximately 32,000 cu. yds., and there is also a small amount of masonry, rock excavation, slope paving and sewer pipe laying. Pamphlets containing further information for bidders, forms of proposal, contract and specifications will be mailed to contractors who apply to the Chief Engineer, or may be obtained at his office, 1 Ashburton Place, Boston, and may also be obtained at the Clinton office. Plans may be seen at the offices of the Board in Boston, Clinton, West Boylston and Oakdale. HENRY H. SPRAGUE, HENRY P. WALCOTT, JAMES A. BAILEY, JR., Metropolitan Water and Sewerage Board. FREDERIC P. STEARNS, Chief Engr. WILLIAM N. DAVENPORT, Secretary. Boston, May 25, 1903.

22-2t

PIPE SEWERS, ANSONIA, O.

Sealed proposals, addressed to C. A. Ackerman, Village Clerk, Ansonia, Ohio, will be received up to 10 o'clock, Thursday, June 4th, 1903, for the construction of approximately six thousand dollars' worth of Pipe Sewers and appurtenances. Bids must be accompanied by a certified check of Five Hundred ($500) Dollars, on some National Bank in Greenville, Ohio, made payable to William Werts, Mayor, without conditions. Same to be forfeited as liquidated damages in case of failure of successful bidder to enter into contract and bond as required by the Village Council within ten days after notification of acceptance of bid. The Council reserves the right to reject any or all bids.

Plans, profiles and specifications may be seen at the Village Clerk's Office on and after May 25, 1903.

WILLIAM WERTS,
JUSTIN M. DeFORD, Mayor.

ELECTRIC LIGHT AND POWER PLANT.

Comptroller's Office,
City of New Orleans,
New Orleans, La., May 18, 1903.

Pursuant to Ordinance No. 1717, N. C. S. sealed proposals will be received at this office until the hour of 2:30 p. m., Monday, June 8, 1903, for the construction of an Electric Lighting and Power System for the City of New Orleans, in accordance with plans and specifications on file in the office of the City Engineer. Deposit $10,000 with the City Treasurer, and his receipt enclosed with bid. Bond $100,000.

Hon. W. J. Hardee, City Engineer, will furnish bidders with a blank form of proposal; no proposal will be considered unless submitted on such form.

The City reserves the right to repect any and all bids.

V. TUJAGUE,
21 2t Comptroller.

OFFICE CONSTRUCTING Q. M., Burlington, Vt., May 25, 1903.—Sealed proposals, in triplicate, will be received until 12 m. June 30, 1903, for constructing, heating, plumbing, gas piping and electric wiring of two sets Field Officers' Quarters, two double sets Captains' Quarters, three double sets Lieutenants' Quarters, and two double Cavalry Barracks, constructing and plumbing for four Cavalry Stables and construction of two Field Artillery Shop buildings, two double Cavalry Stable Guard Houses, one Quartermaster's Storehouse and one Magazine at Fort Ethan Allen, Vt. Information furnished on application. U. S. reserves right to reject or accept any or all proposals or any part thereof. Envelopes containing proposals to be endorsed "Proposals for Public Buildings, Fort Ethan Allen, Vt." Capt. T. B. LAMOREUX, Q. M. 22-3t

OFFICE OF THE CONSTRUCTING QUARTERMASTER, 621 Dooly Bldg., Salt Lake City, Utah, May 26, 1903.—Sealed proposals, in triplicate, will be received here until 11 a.m., Standard time, June 15, 1903, and then opened, for the construction of a Post Exchange and Gymnasium Building, including plumbing, gas piping, heating and electric wiring, at Fort Douglas, Utah. Bidders will state in their bids the time in which they will complete the work. Full information and blank forms of proposals furnished on application to this office. Plans and specifications may be seen here. United States reserves the right to accept or reject any or all proposals, or any part thereof. Envelopes containing proposals to be endorsed "Proposals for Public Buildings," and addressed to Capt. SAMUEL V. HAM, Quartermaster. 22-3t

CONSTRUCTION MATERIAL. — Office of the Commissioners, D. C., Washington, May 20, 1903.—Sealed proposals will be received at this office until 12 o'clock m. June 10th, 1903, for furnishing the District of Columbia the following classes of construction materials: 1. Granite curbing; 2. Asphalt blocks; 3. Red sewer bricks; 4. Sand and gravel; 5. Terra cotta sewer pipe and branches; 6. Vitrified sewer invert blocks and repressed vitrified sewer invert bricks; 7. Vitrified paving blocks; 8. Portland and Natural cement. Specifications, blank form of proposal and all necessary information may be obtained at this office. H. B. F. MACFARLAND, H. L. WEST, JOHN BIDDLE, Commissioners of the District of Columbia. 22-2t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., May 18, 1903.—Sealed proposals for Pier Construction, at Saugatuck, Mich., will be received here until 3 p.m., June 17, 1903, and then publicly opened. Information furnished on application. M. B. ADAMS, Lieut.-Col., Engrs. 21-4t

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Mobile, Ala., until 12 o'clock m., May 30, 1903, and then opened for furnishing all materials and labor necessary for Protecting Ship Island Light Station, Miss., and Pass Manchac Light Station, La., in accordance with specifications, copies of which, with blank proposals and other information, may be obtained on application to Capt. WILLIAM E. CRAIGHILL, U. S. A., Engineer 8th Light-House Dist. 19-4t

ECONOMICS OF

Road Construction

By H. P. GILLETTE, C. E.

CONTENTS

Chapter I.—Historical Review.

Chapter II.—Earth Roads and Earthwork: Profile of Cross-Section of Road—Longitudinal Profile—Gutters and Drains—Embankments—Cost of Earthwork — Surfacing—Traction and Tractive Power—Location.

Chapter III.—Gravel Roads.

Chapter IV.—Macadam Roads: What Holds Macadam Together—Quality of Stone—Quarrying — Dynamite—Crushing — Hauling — Spreading — Rolling — Sprinkling — Quality and Cost.

Chapter V.—Telford Roads.

Chapter VI.—Summary and Conclusion.

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FOREIGN CONTRACTS—EXPORT NEWS.

DRY DOCK.—Christiania, Norway.—New dry dock, 500 ft. long, 73 ft. wide and 30 ft. deep, costing about $82,400, will be constructed in Pusuoes Bay, on Tromo.

ELECTRIC TRACTION.—Isle of Man.—Robt. W. Blackwell & Co., engineers and contractors, London, Eng., have secured the contract for feeder lines for the electric traction system on this island.

BRIDGES AND ROADWAYS.—England.—Bids will be received by E. Foulkes-Jones, Hon. Secy. King's Bridge Com., Llangollen, until June 12, for constructing bridges and roadways at Berwyn.

DRAINAGE WORKS.—Uruguay.—The Government has accepted the bid of Senor V. Scala, the representative of a Buenos Ayres firm, for constructing a system of sanitary drainage in the port of Montivideo. His bid was for about $155,000.

RAILWAY.—Asiatic Turkey.—The Turkish Government has bought a British concession for a line of railway from Haifa to Damascus. It is intended to build a railway through Galilee to Mzerib, by way of Beisan. Estimated cost of a 40-in. gage road, $2,000,000.

PIPE LINE.—Roumania.—Minister Jackson, of Athens, reports that the Roumanian Parliament has appropriated $96,500 for preliminary work connected with the building of a pipe line from Campina, in the petroleum district, to Constanza, on the Black Sea, crossing the Danube by the railway bridge at Gernavoda.

GAS SUPPLY.—Paris, France.—The Gas Committee of the Municipal Council has adopted the report of the Prefect of the Seine rejecting the Devaluez-Duchanoy proposal to supply Paris with gas on the ground that it is impossible to supply gas at the price proposed and for insufficient guarantee. The plan is backed by Americans.

RAILWAY.—Spain.—Concession granted the Nasco Asturiana Ry. Co. for narrow gage line from La Penona on line from Ujo to Frubia to the Pepita and Dolores mines. ——Work has been started on the line of the Vasco-Castellana Co.'s double line from Bilbao to Burgos, 125 miles. British contractors are doing the work. Company has concessions from Burgos to Madrid, which will bring these points 90 miles nearer each other. Surveys on this road now under way.

TUNNEL.—France.—Thornwell Haynes, U. S. Consul at Rouen, reports that work will soon start on a tunnel under the Seine River either at Taucarville or Quillebeuf. Jean Berlier, Engineer, 35 rue Boissy d'Anglas, Paris, was engaged by the chambers of commerce last year to make preliminary investigations as to the feasibility of such a work. He advised carrying out the plan and estimated the cost at $5,905,800. According to the estimate the work could be carried out in three years with an equipment costing $231,000.

RAILWAY.—Nicaragua.—Final organization of the Great Central Ry. effected with Robt. Pitcairn, Pres. Wm. M. Rees, Secy. and Treas. and James Dietrick, Managing Director, of Pittsburg, Pa. Company is capitalized at $10,000,000, and will build and equip a road in northern Nicaragua to connect the capitals of San Salvador, Honduras and Nicaragua with the head of navigation on the Coco River, 200 miles from its mouth. Engineers are in the field under John McCall locating the line, which will be some 320 miles long.

RAILWAY.—Southeast Africa.—W. Stanley Hollis, U. S. Consul, at Lorenco Marquez, reports under date of March 16 that the construction of Portuguese end of the Swaziland R. R. has been authorized; the funds appropriated by the Lisbon Government, and work will commence June 1 Surveys have not yet been made, but will start from Matolla, 16 miles from Lawrence Marquez, on the Delagoa Bay R. R., and running in a westerly direction to the frontier of the Transvaal. The Transvaal Government has assured the Portuguese Government that the line will be continued from the frontier to Ermelo, about 100 miles in a straight line from Matolla. From Machadodorp a private corporation will build to Ermelo. The Central South African Ry. conference at a recent meeting allotted $25,000,000 for railway extension in the Boer states, and set aside $4,705,905 for constructing and equipping a line from Springs to Ermelo, 137 miles, on which work will begin immediately.

CONTRACT PRICES.

[Where (*) precedes items under Contract Prices the work was advertised in Engineering News.]

(*) PAVING.—North Adams, Mass.—Following bids received May 21 for 4,000 sq. yds. brick paving, 1,500 sq. yds. granite paving and 1,500 lin. ft. of curbing: H. C. Wood & Co., granite block, per sq. yd., $4.05; Porter block, $2.45; setting new curb, 35 cts. Miles Fehr Co., Easton, Pa., Mack, $2.61; Porter, $2.57; curbing, 45 cts. Frank Pidgeon, New York, granite, $3.80; Porter, $2.57; Montello, $2.55; curbing, 40 cts. Troy Public Works Co., Utica, N. Y., granite, $3.75; Porter, $2.75; curbing, 35 cts.; W. N. Flint Granite Co., Monson, granite, $3.80; curbing, 36 cts. M. Fitzgerald, Hoosick Falls, N. Y., medium sandstone, $5.63; Porter, $3.59; McEvoy $3,69; Mack, $4.25; Williams, $3.70; curbing, 22 cts.

(*)PAVING.—Geneva, N. Y.—W. S. Wood, Secy. Bd. Pub. Wks., informs us that the following bids were received May 14 for paving Wadsworth, Bradford and Lake Sts., and a part of Poultney St.; contract awarded to F. A. Malette for laying tar macadam on Poultney and Lake Sts., at a total cost of $28,149; R. W. Henson awarded contract for Metropolitan block pavement on Wadsworth St., $4,353; action on Lake road and Bradford St. pavement deferred:

Bids Received at Geneva, N. Y., May 14, 1903, for Paving in Several Streets.

Items.	F. A. Malette, 9 Sherrill St., Geneva.	Barber Asp. Pavg Co., Utica.	R. W. Henson, Geneva.	Eastern Const'n Co., Buffalo.	Thos. Fitzgerald, Jr., Fredonia.	Warner-Quinlan Asphalt Co., Syracuse.
Excavation, a cu. yd	$0.35	$0.50	$0.30	$0.50	$0.38	$0.45
Curb, a lin. ft.	.70	.62	.65	.70	.655	.75
3-in. drain tile, a lin. ft.	.12	.05	.07	.15	.12	.10
12-in. sewer tile, a lin. ft.	.60	.55	.60	1.00	.68	.80
Protection curb, a lin. ft.	.60	.48	.60	.60	.60	.50
Catchbasins	35.00	62.00	30.00	40.00	30.00	50.00
Inlets	20.00	10.00	20.00	35.00	20.00	25.00
Asphalt pavement, a sq. yd	1.975	1.77	.....	1.90	.....	2.21
Tar macadam	1.69	....	....	....	....	....
Mack block	....	....	....	....	2.23	....
Metropolitan block	2.21	....	2.04	2.20	....	....
Total	$52,187	$53,325	$57,931	$59,041	$61,866	$47,054

PAVING.—Seattle, Wash.—The board of public works received the following bids on May 1, for paving First Ave.: (1) concrete; (2) asphalt; (3) brick; (4) maintenance: Stirrat & Goetz, (1) $1.30 per yd.; (2) $2.55; (3) $3; (4) 7 cts. per yd. per yr. A. J. Raisch, (1) $1.26; (2) $2.80, (3) $2.80; (4) 5 cts. Barber Asphalt Co., (1) $1.40; (2) $2.50; (3) $2.90; (4) 3½ cts. F. McLellan, (1) $1.25; (2) $2; (3) $3; (4) 3 cts.

PAVING.—Boise, Idaho.—The Barber Asphalt Co. received the contract for paving Main and 10th Sts. with asphaltum on concrete foundation at $2.65 per sq. yd.

SEWER AND PAVING.—Davenport, Ia.—The People's Construction Co., received the contract for sewering Fifth St. and Rock Island Ave., at $1.25 per sq. yd.; and also for some paving work at 36 cts. for excavation and $1.46 for brick paving.

LAYING WATER MAIN.—Grand Forks, B. C.—George Chappel awarded contract for laying 12,500 ft. of water main at 26 cts. per lin. ft.

(*)SEWERAGE SYSTEM.—Quincy, Mass.—The Sewer Dept., E. W. Branch, Engr., received the following bids May 18 for constructing the sewerage system:

Bids Received at Quincy, Mass., May 18, 1903, for Constructing Secs. 11 and 12, of Sewerage System Section 12.

Quantities.		Eglee, Bunting Co., 120 Milk St., Boston.	Wm. J. McCarthy, 27 Bonair St., Somerville,	C. E. Trumbull Co., Tremont Bldg., Boston.	H. A. Hanscom Co., 53 State St., Boston.	T. J. O'Connell, Dorchester.	Jas. H. Ferguson, 22 Parkman St. Dorchester.
Earth excavation, 0 to 8 ft.	3,250 cu. yds.	$0.95	$0.60	$0.80	$1.00	$0.75	$0.75
" " 8 " 14 "	2,200 " "	1.50	1.50	1.50	1.50	1.10	1.00
" " 14 " 20 "	1,100 " "	2.50	2.80	2.00	1.50	1.50	1.50
" " below 20 ft.	250 " "	3.00	3.00	2.50	2.00	2.00	2.00
Rock excavation, 0 to 8 ft.	50 " "	3.50	4.00	3.50	.10	4.50	4.50
" " 8 " 14 "	50 " "	6.00	5.50	4.50	.10	6.00	6.50
" " below 14 ft.	50 " "	8.00	7.00	7.00	6.00	8.00	8.50
Brick masonry	100 " "	6.00	4.00	5.00	6.00	5.25	6.50
Concrete masonry	175						
Laying 8 and 10-in. sewer pipe.	760						
" 15-in. sewer pipe	1,070						
" 18 and 20-in. sewer pipe	1,152						
" underdrain	2,500						
" chimneys	500						
Lumber in place and secured	10,000						
Paving around manholes	25						
Total							

Section 11.

Quantities.		H.A. Hanscom Co.,	Eglee Bunting Co. Boston
Excavation:			
Earth, 0—8'.	3,750 yds.	$1.00	$0.
" 8—14'.	1,500 "	2.00	1.
" 14—20'.	750 "	3.00	2.
" below 20'	150 "	5.00	3.
Rock 0—8'...	50 "	4.00	3.
" 8—14'	50 "	5.00	6.
" below 14'	50 "	6.00	8.
Earth in tunnel	265 ft...	12.00	7.
Rock in tunnel.	50 "	18.00	17.
Brick masonry ..	75 yds.	6.00	5.
Concrete masonry	300 "	7.00	4.
Laying 20" pipe.	3,720 ft...	.50	.
Underdrain	3,720 "	.25	.
Chimneys	200.....	.20	.
Lumber, placed..	10 M. ft	40.00	40.
Total		$20,380	$16,3

(*)PAVING.—Charlottesville, Va.—De Consult. Engrs., Lynchburg, inform us ing bids were received May 19, 1903, f of paving: (1) bid Warren Bros. Co., B Gasser, Richmond, Va., who also bid $ for 30,000 sq. yds. granite pavement; t this bid was included was $111,228; (3 & Smith, Chillicothe O., using Porter the 30,000 yds. of brick pavement the yd., total, $85,335; using Mack block $89,832, the bid given below is for Peebl

		1.		
Excavation	30,000 cu. yds.	$0.3		
Vitrified brick	30,000 sq. yds.	2.0		
Bitum. macadam	30,000 " "	1.9		
Concrete base	3,000 " "	....		
Stone macadam	40,000 " "	....		
New macadam	15,000 " "	....		
Curbing	22,000 lin. ft.	.44	...	.65
Curbing reset	7,000 " "	.20	.22	.10
Circular curb corners	250 each	.60	...	2.50
Concreting	7,000 " "	1.68	.82	.65
4-in. tile drains	5,000 " "	.05	.16	.10
Total		$90,823	$122,638	$82,935

(*)SEWERS.—Amsterdam, N. Y.—F. E. Crane, Supt. Sewers, received bids May 20 for constructing sewers for which contract were awarded as follows: East Main St., Eveline Contracting Co., Waterford, 250 ft. 27-in. pipe, $6.85 per lin. ft.; 300 ft., 18-in., $4.80; 24-ft., 15-in., $3.35; two manholes, $60 each; catchbasin, $100; 15 connections, $5; total, $3,541. Guy Park Ave., A. Pantelone, Amsterdam, 500 ft. of 15-in. pipe, $2.75 a lin. ft.; 500 ft., 8-in., $2.25; manhole, $50; flushtank, $75; one I. P., $6; two catchbasins, $80 each; total, $2,788. Milton Ave., A. Pantelone, 820 ft., 15-in., 92 cts.; two manholes, $40; four catchbasins, $53 each; total, $1,046.

PAVING.—Cedar Rapids, Ia.—Snouffer & Ford were the lowest bidders for paving Fifth Ave. at the following prices, paving, $1.31½; extra macadam, $2.95; cement curb, 42 cts.; grading, 28 cts.; drain tile, 18 cts.; extra sand, $1.25; resetting curb, 10 cts.

(*)PAVING.—Walden, N. Y.—Jas. T. Young, Village Clk., informs us that the following bids were received May 20, 1903, for 4,000 sq. yds. of brick paving on Main St.: Irregular bids—Dwyer & Sager, Clearfield block, $2.74 a yd.; Theo. H. Allen & Co., Mack block, $2.32; Hornellsville block, $2.08; Miles-Fehr Contracting Co. Metropolitan block, $2.43; (1) Dwyer & Sager, Newburgh, (2) Frank Pidgeon, Saugerties; (3) Miles-Fehr Contracting Co., Easton, Pa.; (4) John H. Hasbrouck, Newpaltz, N. Y. (5) Theo. H. Allen & Co., Oneida:

	1.	2.	3.	4.	5.
Porter block	$2.58	$2.30	$2.43	$2.49	$2.08
Porter wire-cut block	2.53	2.29	....	....	....
Montello block	2.58	2.29	2.40	....	....
Resetting curb a lin. ft.	.10	.16	.20	.05	.08
Excavation, a cu. yd.	.40	.50	.45	.50	.40
4 × 20-in. curb in place	.45	.78	.65	.49	.47
Retaining curb set, a ft.	.05	.20	.60	.08	.07

BRIDGE.—Astoria, Ore.—C. J. Trenchard, County Judge, writes that the contract for a $2,000 bridge at Sea Side was let May 6 to L. Lebeck at $19.75 per M. ft. B. M., for lumber used.

TYP

CUT-

Car Loader Co.

J. HOLT GATES & CO., 1436 Monadnock Bldg., Chicago, have taken the agency of the Skinner Engine Co., of Erie, Pa. They are also acting as representatives of the Quincy Engine Co., of Quincy, Ill. for large Williams vertical cross-compound engines. This firm is now in a position to erect complete steam and electric plants.

THE M. GARLAND CO., Bay City, Mich., has shipped to Herkimer, N. Y., a carload of saw mill machinery, including a five saw Garland Gang Edger, having two stationery and three movable saws. The edger is equipped with two movable side guides, and two Garland's Patented Power chain guides. This chain guide is especially useful for edging hardwood lumber. Warped and crooked boards are engaged and carried through perfectly straight.

THE AMERICAN BLOWER CO., Detroit, Mich., reports among the larger orders recently received the heating and induced draft apparatus for the Ironton (O.) Engine Co.; drying outfits for the Ill. Sugar Refining Co., Pekin, and the Mich. Starch Co., Traverse City; dry kiln for the Mengel Box Co., Louisville, Ky., Brooklyn Cooperage Co., of New York; Buckstege Furniture Co., Evansville, Ind.; Evansville (Ind.) Desk Co., Cadillac Cabinet Co., Detroit.

THE PNEUMATIC SIGNAL CO., New York, has purchased from S. Marsh Young, owner of the Young system of automatic electric track circuit block signals for electric railways, all his rights for the U. S., Can. and Mex., and will arrange to place the system at once on the market. The Young system furnishes the same measure of protection for electric lines as the standard track circuit system does on steam roads. The presence of any pair of wheels on the block section, a broken rail or wire, or an open switch results in a danger signal. The signal company will organize an electric railway department, which will be in charge of Mr. Young, who was one of the incorporators and first Vice-Pres. Hall Signal Co., and for some years the Vice-President and General Manager of the Manhattan General Contruction Co. until he sold the company to the Westinghouse Interests. The Pneumatic Signal Co.'s factory has been until recently at Troy, but it has now moved into the new works at Rochester, N. Y. This plant covers about 240,000 sq. ft. The system by which this company is best known is its low-pressure pneumatic system for interlocking and block signals on steam railway lines and is used extensively in Europe and America. Its entering the street railway field is a new departure, and it is the intention to bring all its experience in the field of steam railway signaling to bear upon the several problems which are confronting the management of high-speed electric lines.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

90,000 YDS. OF STREET PAVING.

Shreveport, La., May 22, 1903.

Sealed proposals will be received by the City Comptroller at the City Hall up to 6 o'clock p. m., June 26, 1903, for the Paving of the following streets in the City of Shreveport, La.:

No. 1—Marshall St., Crockett to Davis; approximate square yards..... 9,756.5
No. 2—Louisiana St. and Ave., Lake to Jordan; approximate sq. yds... 16,453.1
No. 3—Western Ave., Sprague to Hope; approximate sq. yds..... 2,204.8
No. 4—Hope St., Western to Texas; approximate sq. yds..... 7,473.4
No. 5—Texas Road, Cedar to corporation line approximae square yards.... 12,159.9
No. 6—Southern Ave., Jordan to Dasheil; approximate square yards..... 4,418.7
No. 7—Cotton St., Marshall to Texas Ave; approximate square yards..... 7,212.3
No. 8—Commerce St., Cotton to Lake; approximate square yards 5,927.9
No. 9—Caddo St., Market to alley rear Ardis & Co.; approximate sq. yds.. 2,427.2
No. 10—Tannin St., Market to Commerce; approximate square yards..... 3,084.9

SEWERS AND DRAINS.

Ridgefield Park, N. J.

Sealed proposals will be received by the Board of Trustees of the Village of Ridgefield Park, in the County of Bergen and State of New Jersey, for the construction of Sewers and Drains along and through the following roads, streets and avenues:

Bergen Turnpike, from Teaneck Road to Elm St.;

Teaneck Road, from the Bergen Turnpike northerly to the southerly end of the completed sewer in said Teaneck Road;

Maple St., from the Bergen Turnpike northerly to the end of sewer in such street, as shown upon the map of such sewers on file with the Village Clerk, and being within one hundred (100) feet, more or less, of Elm St.;

Oak St., from the Bergen Turnpike northerly to the end of the sewer in such street, as shown by the aforesaid map, and being within one hundred (100) feet, more or less, of Elm St.;

First St., from the Teaneck Road westerly to within one hundred (100) feet, more or less, of Central Ave.;

Second St., starting within one hundred (100) feet, more or less, from Teaneck Road

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR PAVEMENT ON FRONT ST.

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving Front St., from Prospect St. to the City limits, in accordance with the specifications prepared by the City Engineer and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton, until 5 o'clock p. m., June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids.

I. C. HULL,
City Clerk.

ELECTRIC LIGHT AND POWER PLANT.

Comptroller's Office,
City of New Orleans,
New Orleans, La., May 18, 1903.

Pursuant to Ordinance No. 1717, N. C. S. sealed proposals will be received at this office until the hour of 2:30 p. m., Monday, June 8, 1903, for the construction of an Electric Lighting and Power System for the City of New Orleans, in accordance with plans and specifications on file in the office of the City Engineer. Deposit $10,000 with the City Treasurer, and his receipt enclosed with bid. Bond $100,000.

Action, W. J. Hardee, City Engineer, will furnish bidders with a blank form of proposal; no proposal will be considered unless submitted on such form.

The City reserves the right to reject any and all bids.

V. TUJAGUE,
Comptroller.
21-2t

OFFICE CONSTRUCTING Q. M., Burlington, Vt., May 25, 1903.—Sealed proposals, in triplicate, will be received until 12 m. June 15, 1903, for constructing, heating, plumbing, gas piping and electric wiring of two sets Field Officers' Quarters, two double sets Captains' Quarters, three double sets Lieutenants' Quarters, and two double Cavalry Barracks, constructing and plumbing for four Cavalry Stables and construction of two Field Artillery Shop buildings, two double Cavalry Stable Guard Houses, one Quartermaster's Storehouse and one Magazine at Fort Ethan Allen, Vt. Information furnished on application. U. S. reserves right to reject or accept any or all proposals or any part thereof. Envelopes containing proposals to be endorsed "Proposals for Public Buildings, Fort Ethan Allen, Vt." Capt. T. B. LAMOREUX, Q. M. 22-3t

OFFICE OF THE CONSTRUCTING QUARTERMASTER, 621 Dooly Bldg., Salt Lake City, Utah, May 26, 1903.—Sealed proposals, in triplicate, will be received here until 11 a.m., Standard time, June 15, 1903, and then opened, for the construction of a Post Exchange and Gymnasium Building, including plumbing, gas piping, heating and electric wiring, at Fort Douglas, Utah. Bidders will state in their bids the time in which they will complete the work. Full information and blank forms of proposals furnished on application to this office. Plans and specifications may be seen here. United States reserves the right to accept or reject any or all proposals, or any part thereof. Envelopes containing proposals to be endorsed "Proposals for Public Buildings," and addressed to Capt. SAMUEL V. HAM, Quartermaster. 22-3t

CONSTRUCTION MATERIAL. — Office of the Commissioners, D. C., Washington, May 20, 1903.—Sealed proposals will be received at this office until 12 o'clock m. June 10th, 1903, for furnishing the District of Columbia the following classes of construction materials: 1. Granite curbing; 2. Asphalt blocks; 3. Red sewer bricks; 4. Sand and gravel; 5. Terra cotta sewer pipe and branches; 6. Vitrified sewer invert blocks and repressed vitrified sewer invert bricks; 7. Vitrified paving blocks; 8. Portland and Natural cement. Specifications, blank form of proposal and all necessary information may be obtained at this office. H. B. F. MACFARLAND, H. L. WEST, JOHN BIDDLE, Commissioners of the District of Columbia. 22-2t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., May 18, 1903.—Sealed proposals for Pier Construction, at Saugatuck, Mich., will be received here until 3 p.m., June 17, 1903, and then publicly opened. Information furnished on application. M. B. ADAMS, Lieut.-Col., Engrs. 21-4t

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Mobile, Ala., until 12 o'clock m., May 30, 1903, and then opened for furnishing all materials and labor necessary for Protecting Ship Island Light Station, Miss., and Pass Manchac Light Station, La., in accordance with specifications, copies of which, with blank proposals and other information, may be obtained on application to Capt. WILLIAM E. CRAIGHILL, U. S. A., Engineer 8th Light-House Dist. 19-4t

, BLOCK, ASPHALT AND MACADAM PAVING.

Rensselaer, N.Y., May 22, 1903.

proposals will be received by the Council at the office of the City til 8 o'clock p.m., June 16, 1903, for ing and Paving with Brick, Granite Asphalt and Bituminous Macadam of Pavement and furnishing and Granite Curb, building new Catch- d repairing old ones, and all other ch may be necessary to complete the improvements on Second Ave., Co-., Broadway, Third St., Fowler Ave., th St., according to plans and specion file in the City Clerk's Office or ice of C. A. Roemer, Engineer, 508 on Place, Troy, N. Y.

proximate amount of paving is 34- ds.

proximate amount of curbing is 19- t. 22-1

C. A. ROEMER, City Engineer.

ONWEALTH OF MASSACHUSETTS. OLITAN WATER AND SEWERAGE BOARD.

BUILDING ROAD.

proposals will be received at the office of the Metropolitan Water and Sewerage Board, 1 Ashburton Place, Boston, Mass., until 2:30 o'clock p. m. of Wednesday, June 10, 1903, for building a road at the Wachusett Reservoir in West Boylston, Mass. The quantity of earth excavation is approximately 32,000 cu. yds., and there is also a small amount of masonry, rock excavation, slope paving and sewer pipe laying. Pamphlets containing further information for bidders forms of proposal, contract and specifications will be mailed to contractors who apply to the Chief Engineer, or may be obtained at his office, 1 Ashburton Place, Boston, and may also be obtained at the Clinton office. Plans may be seen at the offices of the Board in Boston, Clinton, West Boylston and Oakdale. HENRY H. SPRAGUE, HENRY P. WALCOTT, JAMES A. BAILEY, JR., Metropolitan Water and Sewerage Board. FREDERIC P. STEARNS, Chief Engr. WILLIAM N. DAVENPORT, Secretary. Boston, May 25, 1903. 22-2t

PIPE SEWERS, ANSONIA, O.

Sealed proposals, addressed to C. A. Ackerman, Village Clerk, Ansonia, Ohio, will be received up to 10 o'clock, Thursday, June 4th, 1903, for the construction of approximately six thousand dollars' worth of Pipe Sewers and appurtenances. Bids must be accompanied by a certified check of Five Hundred ($500) Dollars, on some National Bank in Greenville, Ohio, made payable to William Werts, Mayor, without conditions. Same to be forfeited as liquidated damages in case of failure of successful bidder to enter into contract and bond as required by the Village Council within ten days after notification of acceptance of bid. The Council reserves the right to reject any or all bids.

Plans, profiles and specifications may be seen at the Village Clerk's Office on and after May 25, 1903. WILLIAM WERTS,
JUSTIN M. DeFORD, Mayor.

YPE

T-OFF

such bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids.

I. C. HULL,
City Clerk.
22-2t

WATER-WORKS AND ELECTRIC LIGHT BONDS.

Clayton, Ala., May 14, 1903.

The Town of Clayton will receive bids until Saturday, June 13, 1903, for the sale of Twenty Thousand Dollars of Municipal Electric Light and Water-Works Bonds. A certified check of Five Hundred Dollars must accompany each bid. The town reserves the right to reject any and all bids.

For particulars and information concerning said bonds, apply to

J. S. WILLIAMS, Mayor.
J. J. WINN, JR., City Clerk. 21-4t

ENGINEER OFFICE, U. S. Army, Room 2, Custom-House, Norfolk, Va., May 15, 1903.—Sealed proposals for Dredging Edenton Bay, N. C., will be received here until 12 m. June 25, 1903, and then publicly opened. Information furnished on application. 22-2t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., May 25, 1903.—Sealed proposals for Extension of West Breakwater at Petoskey, Mich., will be received here until 3 p.m., June 24, 1903, and then publicly opened. Information furnished on application. M. B. [illegible]

CARL HALLBERG, Village Clerk. 21-2t

STONE AND GRAVEL ROAD.

Monmouth County, N. J.

Sealed proposals will be received by a committee of the board of chosen freeholders of the County of Monmouth, at the court house in Freehold, N. J., on Monday, June 15, 1903, until 10 o'clock a. m., and then publicly opened, for the construction of a stone and gravel road, under the state aid act, four and one-half miles in length, on Corlies Avenue, from West Grove to Hamilton, in the Township of Neptune, in said County. Each bidder must accompany his bid with a certified check for one thousand dollars ($1,000), made payable to the director of the board of chosen freeholders of said County, as a guarantee that if said contract is awarded to him, he will, when required by the board, execute an agreement in writing to faithfully perform the work according to the plans and specifications. All proposals must be made on the blank form furnished for that purpose. Plans can be seen at the office of the Engineer, W. H. DeNyse, 164 Broadway (Post Office Building), Long Branch, N. J. Specifications and blank forms of proposals can be obtained from the County Collector, Freehold, N. J., or of the engineer.

The right to reject any or all bids is reserved.

JOHN GUIRE,
Director Board of Chosen Freeholders, Long Branch, N. J. 22-3t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 14, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 18th day of June, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the U. S. Post Office at Boone, Ia., in accordance with drawings and specifications, copies of which may be had at this office or the office of the Postmaster at Boone, Ia., at the discretion of the Supervising Architect. JAMES [illegible]

ECONOMICS OF Road Construction

By H. P. GILLETTE, C. E.

CONTENTS

Chapter I.—Historical Review.

Chapter II.—Earth Roads and Earthwork: Profile of Cross-Section of Road—Longitudinal Profile—Gutters and Drains—Embankments—Cost of Earthwork — Surfacing—Traction and Tractive Power—Location.

Chapter III.—Gravel Roads.

Chapter IV.—Macadam Roads: What Holds Macadam Together—Quality of Stone—Quarrying — Dynamite—Crushing — Hauling — Spreading — Rolling — Sprinkling — Quality and Cost.

Chapter V.—Telford Roads.

Chapter VI.—Summary and Conclusion.

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COMMONWEALTH OF MASSACHUSETTS.
METROPOLITAN SEWERAGE WORKS.

BRICK AND CAST-IRON PIPE SEWERS.

NOTICE TO CONTRACTORS.

Sealed proposals will be received at the office of the Metropolitan Water and Sewerage Board, 1 Ashburton Pl., Boston, Mass., until 2:30 p.m., of Thursday, June 4, 1903, for constructing parts of Sec. 44, Sec. 46, and force-mains and sewer in connection with Ward St. Pumping Station, being Section 76 of the high-level sewer, located respectively on Nut Island and Nut Island Bar, in Quincy, Hough's Neck, in Quincy, and in Roxbury, in accordance with the forms of contract and specifications to be furnished by the Board. All bids must be upon the blank forms furnished by the Board. Some particulars are estimated to be as follows:

Parts of Section 44: Length, 918 ft.; inside diameter of sewer, 135 ins by 150 ins.; masonry sand-catcher and screen-chamber; laying 570 ft. of 60-in. cast-iron pipe.

Section 46: Length, 792 ft.; inside diameter of sewer, 135 ins. by 150 ins.

Section 76: Laying 3,000 ft. of 48-in. cast-iron force main, 20 ft. of 78-in. by 84-in. sewer, and masonry bell-mouth in connection therewith.

Plans can be seen and specifications and forms of contract can be obtained at the above office, or at the office of the Engineering Department, Pemberton Building, Boston, Mass. The Board reserves the right to reject any or all bids. HENRY H. SPRAGUE, HENRY P. WALCOTT and JAMES A. BAILEY, JR., Metropolitan Water and Sewerage Board. WILLIAM M. BROWN, Engineer Sewerage Works. WILLIAM N. DAVENPORT, Secretary. 22-1t

PUMP HOUSE, WATER PIPE, ETC.

Meadville, Pa.

Sealed proposals will be received by the Water Commissioners of the City of Meadville, Pa., up to 8 p. m. of the 10th day of June, 1903.

1. For the furnishing of all materials and erection of one pump house and boiler house, size of building, 50 × 100 ft., located on the Rogers Road, about one mile west of Meadville.

2. For the furnishing of all materials and erection of foundation for Worthington pump, which will be erected in said building.

3. For laying water pipes and setting special castings valves and all other appurtenances. The contract will cover laying about 7,000 ft. of 20, 18 and 16-in. pipe from present pump house to new pump house.

4. For furnishing f. o. b. cars at Meadville, Pa.:

About 600 tons of cast-iron pipe and specials;
700 ft. of 4-in. wrought iron pipe;
Six 4-in. flange valves;
Four 16-in. hub valves;
One 18-in. hub valve;
Two 6-in. valves.

Time of delivery to be stated on all materials.

Plans and specifications may be seen at the office of the water department in Meadville, Pa., or specifications in detail will be mailed on request.

Each bid must be accompanied by a certified check for 10% of the amount of the bid, drawn payable to Geo. S. Cullum, Superintendent of the Water Department, of Meadville, Pa.

The right to reject any and all bids is expressly reserved.

Address all bids to

GEO. S. CULLUM,
22-1t Supt. Water-Works, Meadville, Pa

PUMPING PLANT AND IMPROVEMENT TO WATER SUPPLY.

Water Commissioners Office, Schenectady, N. Y., May 12, 1903.

Sealed proposals will be received up to twelve (12) o'clock noon of Monday, June 8, 1903, for furnishing and erecting one Pumping Engine and two Tubular Boilers at the Rotterdam Pumping Station.

Also for erecting an Engine Room, constructing a Collecting Gallery, erecting a Stand-pipe, and foundation for same, and laying a thirty-six (36) inch Cast-Iron or Steel Riveted Force Main.

Forms of proposals showing in detail the manner and conditions under which tenders for the above-mentioned work will be received together with specifications, drawings and estimate may be obtained at the Water Commissioners' office, No. 447 Franklin St.

Hon. H. S. VAN VOAST,
CHARLES E. LUCKHURST,
ALONZO PETERS,
JOHN J. MOFFETT,
HERMAN URY,
21-2t Water Commissioners.

ELECTRIC LIGHT PLANT.

Greene, Chenango Co., N. Y., May 21, 1903.

Sealed proposals, addressed to the Board of Trustees, Village of Greene, N. Y., will be received at their office, until 7 o'clock p. m. Monday, June 8, 1903, for the following:

The furnishing and setting of two 72-in. × 18-ft. horizontal fire tubular boilers, with 74 4-in. flues and all boiler trimmings.

The Board will also entertain bids for water-tube or other patented types of boilers of equal capacity;

The construction of a power house, including a 75-ft. high chimney;

The furnishing of two 100-HP. engines;

The furnishing of two 60-KW. single-phase alternating dynamos and all station apparatus.

Bids will also be received for lamps, converters and pole line equipment.

General specifications can be seen at the office of the Board of Trustees at Greene, N.Y., or of Edgar B. Kay, Engineer, Ithaca, N. Y.

The Board reserves the right to reject any or all bids.

By order of the Board of Trustees of the Village of Greene, N. Y.

META L. COWLES,
22-2t Clerk of the Board.

15 MILES OF TELFORD MACADAM ROADS.

Essex County, N. J.

Sealed proposals will be received by the Committee on Roads and Assessments of the Board of Chosen Freeholders of Essex County, N. J., for Grading and Paving with Telford Pavement the following avenues and roads:

Grove St., in the City of East Orange, Borough of Vailsburg and Town of Irvington, extending from Central Ave, East Orange, to Clinton Ave., Irvington, a distance of about 2 miles;

Swamp Road, in the Township of Caldwell and Livingston, extending from Bloomfield Ave., Caldwell, to Mt. Pleasant Ave., Livingston, a distance of about 5 miles;

Dutch Lane, in the Township of Caldwell, extending from Bloomfield Ave. to Fairfield Road, a distance of about 2⅔ miles;

Ridgewood Ave., in the Borough of Glen Ridge, extending from Bay Ave. to Watchung Ave., a distance of about 1½ miles;

Hobart's Gap Road, in the Township of Livingston and Millburn, extending from Northfield Road, Livingston, to the Morris Turnpike, a distance of about 4 miles.

The proposals to be submitted to the Committee on Thursday, June 11, at 11 a.m., at the office of the Committee, 196 Market St., Newark, N.J., and at no other time or place, each road to be bid for separately.

Each proposal to be accompanied with a certified check for one thousand ($1,000) dollars as surety for the execution of the necessary contract, and is to be endorsed on the outside with the name of the bidder and the work proposed to be done.

Plans and specifications can be seen at the above office.

The Committee reserve the right to reject any or all bids. 22-2t

THOMAS McGOWAN, Director.

BRICK AND PIPE SEWER CONSTRUCTION.

Shreveport, La., May 22, 1903.

(1) Sealed proposals will be received at the office of the City Comptroller until 6 p.m. June 26th, 1903, for constructing the following sewers:

778 lin. ft. 18-in. vitrified pipe sewer;
1,029 " " 24-in. " " "
366 " " 30-in. circular brick or concrete sewer;
362 " " 42-in. circular brick or concrete sewer;
373 " " 54-in. circular brick or concrete sewer;
40 " " 72-in. circular brick or concrete sewer;

With manholes, catchbasins, complete.

(2) Plans and specifications may be seen and blank proposals obtained at the office of the City Engineer after May 26th.

(3) Each proposal must contain full name of party or parties making same and must be accompanied by certified check equal to 10% of the estimated amount of contract, payable to the City Comptroller as surety that, if the proposal be accepted, a contract will be entered into.

(4) No proposal will be entertained unless made on blanks furnished by the City Engineer.

(5) A bond equal to full amount of the contract as let will be required of contractors to secure faithful performance of contract.

(6) The city reserves the right to reject any and all bids. C. G. RIVES,
22-4t Comptroller.

OVER 130 MILES OF STATE HIGHWAY IMPROVEMENTS.

NOTICE TO CONTRACTORS.

State of New York,
Office of the State Engineer and Surveyor,
Albany, N. Y., May, 1903.

Pursuant to Chapter 115 of the Laws of 1898, sealed proposals will be received by the undersigned, at his office in the State Hall, at Albany, N. Y., on Monday, the 8th day of June, 1903, at 12 o'clock noon, for the improvement of public highways, as follows:

No. 72—Catskill Road, Tompkins county; length, 1.869 miles.
No. 126—Town Line Extension Road, Broome county; 1.970 miles.
No. 127—Park Bridge Road, Broome county; length, 2.040 miles.
No. 128—Aurora-Buffalo Road, Erie county; length, 5.573 miles.
No. 129—River Road, Secs. 2-3, Erie county; length, 3.015 miles.
No. 130—Main Street Road, Sec. 4, Erie county, length, 5.625 miles.
No. 131—Main Street Road, Sec. 5, Erie county; length, 6.581 miles.
No. 132—Genesee Turnpike, Onondaga county; length, 1.130 miles.
No. 133—Little Falls-Dolgeville Road, Herkimer county; 2.290 miles.
No. 134—Fenton Road, Broome county; length, 2.170 miles.
No. 135—Violet Avenue Road, Dutchess county; length, 3.290 miles.
No. 136—Windsor Road, Sec. 2, Clinton county; length, 1.750 miles.
No. 137—Plattsburg-Keeseville, Sec. 2, Clinton county; 4.520 miles.
No. 138—Plattsburg-Mooers, Sec. 1, Clinton county; 7.570 miles.
No. 139—Hamilton Bridge Road, Oneida county; length, 1.290 miles.
No. 140—Seneca Turnpike, Oneida county; length, 2.280 miles.

Sealed proposals will also be received by the undersigned at his office in the State Hall at Albany, N. Y., on Wednesday, the 10th day of June, 1903, at 12 o'clock noon, for the improvement of public highways as follows:

No. 141—Kingston-Ellenville, Sec. 3, Ulster county; 6.820 miles.
No. 142—Saugerties-Woodstock, Sec. 3, Ulster county; 2.850 miles.
No. 143—Echo Lake-Pine Bridge, Westchester county; 3.140 miles.
No. 144—Bedford-Cross River, Westchester county; 5.230 miles.
No. 145—Delaware River Road, Delaware county; length, 1 mile.
No. 146—Geneva-Canandaigua Road, Ontario county; 5.624 miles.
No. 147—Burr's Mills Road, Jefferson county; 3.920 miles.
No. 148—Pine Bridge-Yorktown Heights, Westchester county; 3.490 miles.
No. 149—Yorktown Heights-Putnam county Line, Westchester county; 6.620 miles.
No. 150—Cross River-Turk Hill, Westchester county; 3.460 miles.
No. 151—Turk Hill-Putnam County Line, Westchester county; length, 5.520 miles.
No. 152—Fonda, East, Montgomery county; length, 2.500 miles.
No. 153—Newburg-Campbell Hall, Orange county; length, 13.380 miles.
No. 154—Chester-Valls Gate, Orange county; length, 11.490 miles.
No. 155—Fonda, West, Montgomery county; length, 2.500 miles.
No. 156—Chester-Goshen Road, Orange county; length, 3.530 miles.

Plans and specifications for all of the above work may be seen at the office of the undersigned. They may also be seen for all roads in the counties of Herkimer, Dutchess, Clinton, Ulster, Westchester, Delaware, Montgomery and Orange at the office of H. A. Van Alstyne, Division Engineer, State Hall, Albany, N. Y.; for the counties of Tompkins, Broome, Onondaga, Oneida and Jefferson, at the office of W. H. H. Gere, Division Engineer, Weighlock, Syracuse, N. Y.; for the counties of Erie and Ontario, at the office of A. J. Rockwood, Division Engineer, Triangle Building, Rochester, N. Y. Plans and specifications for the roads within each of the following counties may be seen at the office of the County Clerk of the county within which each road is located, respectively: Tompkins, Herkimer, Dutchess, Delaware, Montgomery and Jefferson; and at the office of the Clerk of the Board of Supervisors of the county within which each road is located respectively: Broome, Erie, Onondaga, Clinton, Oneida, Ulster, Westchester, Ontario and Orange.

The attention of bidders is called to the fact that the following roads are in such close proximity to each other that they can be economically managed by the same contractor: Nos. 126, 127 and 134; Nos. 130, and 131; Nos. 139 and 140; Nos. 152 and 155; Nos. 143, 148 and 149; Nos. 144, 150 and 151.

Proposals must be made for the completion of each road for a lump sum in accordance with plans and specifications. Each proposal must be accompanied by New York draft or certified check payable at sight to the order of the State Engineer and Surveyor for 5% of the proposal. Such draft or check will be held until the execution of the contract. The successful bidder must give a bond executed by a surety company approved by the undersigned and in the amount not to be less than 50% of the contract price. Attention is called to the fact that 90% monthly payments will be made instead of 75% as formerly.

Proposals for each road must be presented in a separate sealed envelope endorsed on the outside with the number and name of the road for which the proposal is made.

Specifications, bidding sheets and form of contract may be had on application to the undersigned or to the Division Engineers above mentioned.

The right is reserved to reject any and all bids.

EDWARD A. BOND,
21-3t State Engineer and Surveyor.

U. S. ENGINEER OFFICE, St. Augustine, Fla., May 9, 1903.—Sealed proposals for constructing Training Walls in St. John's River, Fla., will be received at U. S. Engineer Office, Jacksonville, Fla., until noon, June 9, 1903, and then publicly opened. Information furnished on application. FRANCIS R. SHUNK, Capt., Engrs. 20-4t

DREDGING.

Commonwealth of Massachusetts,
Board of Harbor & Land Commissioners,
State House, Boston, May 18, 1903.

Sealed bids or proposals, endorsed "Proposals for Dredging at Bass River," will be received by the Board of Harbor and Land Commissioners, Room 131, State House, Boston, Mass., until 12 o'clock noon of Thursday, June 4, 1903, and then and there will be publicly opened and read.

The work to be done is the dredging of about 15,000 cu. yds. site measurement, to form a channel 100 ft. wide on the bottom and about 1,700 ft. long across the bar at the mouth of Bass River in the towns of Dennis and Yarmouth.

All proposals must be made upon blank forms which, together with other information in regard to the work, may be obtained at the office of the Board, where plans and specifications may be seen.

Each bidder will be required to give the Board satisfactory assurance of his competency, experience and responsibility.

The right is reserved to reject any and all bids and to waive any defect or informality, at the discretion of the Board.

WOODWARD EMERY,
CHARLES C. DOTEN,
GEORGE E. SMITH,
22-1t Harbor and Land Commissioners.

OFFICE CONSTRUCTING QUARTERMASTER, Whipple Barracks, Prescott, Ariz., May 23, 1903.—Sealed proposals, in triplicate, subject to the usual conditions will be received here until 3 p.m., June 8th, 1903, and then opened for furnishing labor and material for the erection, etc., at Whipple Barracks, Ariz., of one double and two single Barracks, one double and two single Quarters for Officers, one Q.M. and Subsistence storehouse, one Stable, one Guard House. Information furnished on application to Chief Q. M., Denver, Colo.; San Francisco, Cal.; Constructing Q. M. Fort Leavenworth, Kan., or this office. Envelopes containing proposals should be endorsed "Proposals for Public Buildings at Whipple Barracks, Arizona," and be addressed to CHAS. C. WALLCUTT, JR., Constructing Quartermaster. 22-2t

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Mobile, Ala., until 12 o'clock m. June 26, 1903, and then opened, for furnishing the materials and labor necessary for the construction and delivery of the Sabine Bank Light Station, Tex., in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to Capt. WILLIAM E. CRAIGHILL, U.S.A., Engineer Eighth Light-House District. 22-4t

U. S. ENGINEER OFFICE, New London, Conn., May 21, 1903.—Sealed proposals, in triplicate, for extending Breakwater at New Haven, Conn., will be received here until 12 noon, June 22, 1903, and then publicly opened. Information on application. CHAS. F. POWELL, Maj., Engrs. 22-4t

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Tompkinsville, N. Y., until 1 o'clock p. m., Wednesday, June 24th, 1903, and then opened, for furnishing and delivering miscellaneous articles required for the use of the Light-House Establishment during the fiscal year to end June 30, 1904, in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to Maj. WILLIAM T. ROSSELL, U. S. A., Engineer, Third Light-House District. 22-4t

U. S. ENGINEER OFFICE, 812 St. Paul St., Baltimore, Md., May 21, 1903.—Sealed proposals for Dredging in Patapsco River, Md., will be received until noon, June 22, 1903, and then opened. Specifications, blank forms and information furnished on application. CHAS. J. ALLEN, Lieut.-Col., Engrs. 22-4t

Advertised in the News Only

Enfield, N. H., April 17, 1903.

THE ENGINEERING NEWS PUBLISHING CO., New York.

Gentlemen: I send herewith tabulated list of bidders and bids for putting in our Pipe Line. We advertised in the News only, and received over 25 applications for specifications, and to-day 12 contractors appeared to look over the job, 8 of whom made bids in conformity with the requirements.

Work will commence on or before May 10, and the job will be completed on or before August 1st. The A. W. Stone Construction Co., who received the contract last August, to build the dam and reservoir in competition with ten others, is now at work and will complete it on or before Sept. 1.

Yours truly,
E. B. HUSE, Chairman,
Board of Water Commissioners.

The proposal advertisement referred to above was inserted in two issues of ENGINEERING NEWS and cost about $11 and brought the above wide competition. The bids range from $6,500 to $10,117. (See page 231 of Supplement for April 23.) All construction work, no matter what the size, should be advertised in ENGINEERING NEWS. The cost is $2.40 an inch—AND IT PAYS.

WATER-WORKS IMPROVEMENTS.

Ilion, N. Y.

Sealed proposals will be received by the Board of Water Commissioners, of the Village of Ilion, N. Y., until 12 o'clock noon, on the 9th day of June, 1903, for the construction of improvements to the Ilion Water Supply System, consisting in general of a covered filter bed, about 45 ft. by 200 ft.; an impounding reservoir of about 63,000,000 gallons capacity; a masonry intake on Hawke's Creek, and the connecting pipe lines, consisting approximately of 5,700 ft. of 6-in., 350 ft. of 8-in., 1,850 ft. of 10-in., and 4,250 ft. of 12-in. cast-iron pipe, with their accessories of valves, specials, etc. Bids will be received on the cast-iron pipe and pipe furnishings, on the pipe laying, and Hawke's Creek intake, on the filter beds, and on the impounding reservoir, separately, or on the work as a whole.

Plans can be seen and specifications obtained at the office of the Board at Ilion, or at the office of Knight & Hopkins, Engineers Rome, N. Y., after May 26.

The Board hereby reserves the right to reject any or all bids, or accept any that in their judgment will be for the best interests of the Village.

A bond satisfactory to the Board in amount and sureties will be required of those to whom the contract may be awarded.

Cash or a certified check, made payable to the order of the Board of Water Commissioners, of Ilion, N. Y., to the amount of $500 must be deposited by each bidder and accompany his bid as a guarantee that in case the contract is awarded him, he will, within seven days thereafter, execute said contract.

Bids must be sealed and addressed to the Board of Water Commissioners, Ilion, N. Y., and marked on the outside of the envelope enclosing them "Proposals for Ilion Water-Works."

Signatures of Board Members.

C. M. GRAY, President.

A. N. RUSSELL, Secretary.
J. V. SCHMIDT, Treasurer.
FREDERICK JOERISSEN.
THOMAS RINGWOOD. 21-2t

PIPE AND CONCRETE SEWERS.

Coldwater, Mich., May 23d, 1903.

Sealed proposals will be received at the office of the Board of Public Works until 3 o'clock p.m. Wednesday, June 10, 1903, for the construction of approximately 1,440 ft. of 36-in. concrete sewer, 358 ft. 24-in. pipe sewer, 809 ft. 20-in. pipe sewer, 426 ft. of 18-in. pipe sewer, and 928 ft. of 15-in. pipe sewer, together with the necessary manholes, catchbasins, inlets, etc.

Each bid must be accompanied by a certified check for one thousand ($1,000) dollars as a guarantee of good faith on the part of the bidder.

The forms of proposals, plans, specifications etc., on file at the office of the Board of Public Works, and at Riggs & Sherman, 613 The Nasby Toledo, O.

The Board reserves the right to reject any or all bids. WM. G. MOORE,
Clerk Board of Public Works
RIGGS & SHERMAN, Engineers. 22-1t

WATER-WORKS SUPPLIES.

Great Falls, Mont., May 18, 1903.

Sealed proposals will be received by the City Clerk, Great Falls, Mont, Room 24, Dunn Block, until 8 o'clock p. m. June 15, 1903, for furnishing the following Water-Works Material and Supplies, delivered f. o. b. cars Great Falls, Mont.:

42 Fire Hydrants, with two 2½-in. and one steamer nozzle, 6-in. hub connection; 5 ft. from surface of ground to base of connecting pipe;
11 8-in. Gate Valves, with two hub ends;
24 6-in. Gate Valves, with two hub ends;
1,500 lbs. Jute Packing, or Spun Oakum: suitable for 6 and 8-in. joints.

Copies of the specifications, and forms of proposals may be obtained at the City Engineer's Office, Room 20, Dunn Block. Copies of the same will be furnished on application.

All bids must be accompanied by a certified check on a Great Falls Bank in the sum of Five Hundred ($500) Dollars. The check of the successful bidder or bidders will be held by the City Treasurer as a bond for the faithful performance of the contract, according to the specifications.

Proposals must be addressed to City Clerk, Great Falls, Mont., and marked "Proposal."

The City Council reserves the right to accept any bid or reject any and all bids.

W. H. SMITH, City Clerk.

Copy of the specifications are on file at the office of the Engineering News, 220 Broadway, New York. 22-1t

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR PAVEMENT ON PROSPECT AVE. (FROM LEWIS ST. TO SOUTH DEPOT ST.).

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving Prospect Ave., from Lewis St. to the north line of South Depot St., in accordance with the specifications prepared by the City Engineer, and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton, until 5 o'clock p. m., June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids. I. C. HULL,
22-2t City Clerk.

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR PAVEMENT ON CLINTON ST.

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving Clinton St., from the present westerly terminus of the pavement on said street to the west line of Jarvis St., in accordance with the specifications prepared by the City Engineer, and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton, until 5 o'clock p. m. June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids. I. C. HULL,
22-2t City Clerk.

MACADAM ROAD.

NOTICE OF RECEPTION OF PROPOSALS FOR MACADAM ROAD ON FRONT STREET.

City Clerk's Office.
Binghamton, N. Y., May 20, 1903.

Notice is hereby given that sealed proposals for paving:

Front St., from Prospect St. to the city limits.

In accordance with the specifications prepared by the City Engineer and now on file in the City Clerk's office, will be received at the City Clerk's office of the City of Binghamton, until 5 o'clock p. m., June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for building macadam road.

Bidders shall, after stating price for the work, also state price per cubic yard which they will allow the city for broken stone to be taken by contractor at the stone yard in the city.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall in such case, complete said work when directed in the Spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposal may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids. I. C. HULL,
22-2t City Clerk.

12 MILES OF MACADAM ROADS.

Burlington County, N. J.

John E. Darnell, Director of the Board of Chosen Freeholders of the County of Burlington, hereby calls for bids for the construction of the following macadam roads in the County of Burlington:

1. Road beginning at a point where the Red Lion and Vincentown Road intersects the stone road from Vincentown to Crossroads, known as the "Vincentown and Red Lion Road," and runs in a southerly direction following the line of the Vincentown and Red Lion Road to the village of Red Lion, a distance of about three and a half miles. Said road is to be 12 ft. wide and 6 ins. deep.

2. Road known as the Bordentown and Crosswicks and Chesterfield Road, consisting of two sections as follows:

(a) Road beginning at the city line of the City of Bordentown, and extending to the intersection of Bridge Ave. and Main St., in the Village of Crosswicks, about three and one-fifth miles long;

(b) Road beginning at its intersection with the last-mentioned road, and extending to the Village of Chesterfield, a distance of about two miles.

Said road, composed of the two sections aforesaid, to be 12 ft. wide and 6 ins. deep.

3. Road from Masonville to Moorestown. This road is to be of different widths and different depths, as will be seen by an examination of the specifications. This road is about three miles in length.

Bids will be received for the construction of these roads, upon the following conditions:

1. All bids shall be in writing.

2. All work and construction to be done on said roads shall be strictly according to the specifications prepared, and approved by the State Commissioner of Roads, and the said Board of Chosen Freeholders.

3. Each bidder must accompany his bid with a certified check, payable to John E. Darnell, Director of the Board of Chosen Freeholders of the County of Burlington, for one thousand ($1,000) dollars, as a guarantee that if said work is awarded to said bidder he will enter into a contract with said Board to do the work.

4. The successful bidder will be required to give a surety company bond to secure his contract in an amount equal to the estimated cost of said work.

5. All bids shall be presented to a committee appointed by said Board of Freeholders, at the Court House, in Mount Holly, N.J., on Monday, the 8th day of June, next, at 2 o'clock in the afternoon, at which time and place all bids will be immediately opened and publicly read.

6. No bids shall be presented to any member of said Board of Freeholders or any member of the committee thereof, except at the above stated time and place.

7. That the Board of Chosen Freeholders retains the privilege of rejecting any or all bids.

JOHN E. DARNELL,
Director.

N. B.—The plans and specifications for the above mentioned road can be seen at the law offices of Charles K. Chambers, in the Masonic Temple, Mount Holly, N. J. 21-3t

STEEL OR WOODEN BRIDGES.

Parish of Caddo, Shreveport, La.
BIDS ARE INVITED.

For building either Wooden or Steel Bridges at the following places: Bridge over Dooley Bayou, about 160 ft. long, at Section Six plantation, in Ward 1, of Caddo Parish; also for Steel or Wooden Bridge, with earthwork approaches at Hale's Ferry, between Wards 1 and 2, bridge 150 ft. long and earthwork about 400 yds.; also bridge over Red Bayou in Ward 1, at Gilliam, about 200 ft. long, either pile driven or steel. Bids to be opened at meeting of jury, June 18, 1903. The jury reserving the right to reject any and all bids.

P. P. KEITH, President.
A. L. DURINGER, Clerk. 22-3t

CREMATORY FOR THE INCINERATION OF GARBAGE.

City of Shreveport, La., May 19, 1903.

Sealed proposals are hereby invited for the erection of a Crematory for the incineration of garbage in the City of Shreveport. Plans, specifications and daily capacity, together with a certified check in the sum of five hundred dollars, as evidence of good faith and guarantee to sign contract, to accompany each proposal. The plant to cost not exceeding $10,000. The contractor to accept payment in three annual instalments to be provided for in budget of expenses for the years 1904, 1905 and 1906, with 5% interest added. The City will provide location, and reserves the right to reject any or all bids and return checks.

Bids to be in hands of Comptroller by Monday, June 15, 1903, at 6 p. m. 22-3t

C. G. RIVES, Comptroller.

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR PAVEMENT ON SOUTH DEPOT ST. (CHENANGO TO LEWIS).

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving South Depot St., from Chenango to Lewis St., in accordance with the specifications prepared by the City Engineer, and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton, until 5 o'clock p. m. June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids. I. C. HULL,
22-2t City Clerk.

BRICK PAVEMENT.

NOTICE OF RECEPTION OF PROPOSALS FOR BRICK PAVEMENT ON FRONT ST. FOR PAVEMENT ON CONKLIN AVE.

City Clerk's Office,
Binghamton, N.Y., May 20, 1903.

Notice is hereby given that sealed proposals for Paving Conklin Ave., from the present easterly terminus of the pavement of said avenue to the Pierce Creek Bridge, in accordance with the specifications prepared by the City Engineer, and now on file in the City Clerk's Office, will be received at the City Clerk's Office of the City of Binghamton, until 5 o'clock p. m. June 9, 1903, and will be opened by the Common Council at a meeting to be held on said date.

Proposals will be received by said Common Council for paving with vitrified brick and each bidder will be required to state in his proposal the kind of brick which he proposes to use. Bidders will be required to state separately price of both broken stone and gravel concrete.

The successful bidder shall agree that if from cause the work specified shall not be fully completed within the time specified it shall be optional with the city to stop the work at any time after the time fixed by the specifications for completion, and the contractor shall, in such case, complete said work when directed in the spring of 1904, and each bidder shall insert such agreement in his proposal.

Blank forms for proposals may be obtained of the City Clerk at his office.

The Council reserves the right to reject any or all bids. I. C. HULL,
22-2t City Clerk.

COUNTY JAIL, ETC.

Sealed bids will be received at my office at Two Harbors, Minn., up to ten (10) o'clock a.m., Tuesday, June 16th, 1903, for the building and furnishing of material for the erection and construction of a County Jail and Sheriff's Residence, according to plans and specifications now on file in my office, a certified check for the sum of 5% of the amount bid to accompany same. The Board of County Commissioners reserves the right to reject any or all bids.

JOHN P. PAULSON,
22-1t County Auditor, Lake County, Minn.

Proposals In Engineering News

They Cover the Whole Engineering Field—because it is the greatest Contractors' Paper

	May 14.		May 21.	
	In's.	No. of Advts.	In's.	No. of Advts.
Bridges	13	2	12	2
Buildings	—	—	3	2
Cement, Sand, etc.	—	—	2	2
Dams and Locks	2	2	2	2
Dredging and River Work	16	15	8	10
Electric Light and Power	8	3	10	5
Paving, Road Work	17	8	34	6
Railway, Cars, etc.	4	3	3	2
Sewers	20	8	37	6
Water works and Supplies	23	7	36	14

Besides the above, advertisements have appeared in other issues for Tunnels, Garbage Disposal Plants, Manufacturing Plants, Steam Shovel Work, Conduits, Coffer Dams, etc., etc

Advertise all Municipal, County and large private work in ENGINEERING NEWS.

ADVERTISERS' CLASSIFIED DIRECTORY.

CONTINUED ON PAGE 159.

Agencies.
Moore, J D, 45 Liberty st, New York

Air Brakes.
Westinghouse Air Brake Co, Pittsburg, Pa

Air Compressors.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Air Compressor Wks, 26 Cortlandt st, N Y
American Well Works, Aurora, Ill
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 212-17 Herman bldg, Milwaukee
Clayton Air Compressor Works, 114 Liberty st, N Y
d'Auria Pumping Engine Co, Drexel bldg, Phila
Fairbanks, Morse & Co, Chicago
General Pneumatic Tool Co, Montour Falls, N Y
Gray-Blaisdell Co, Bradford, Pa
Guild & Garrison, So 10th st, Brooklyn, N Y
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati O
McGowan, John H, Co, Cincinnati, O
McKiernan Drill Co, 170 Liberty st, N Y
Norwalk Iron Works, So. Norwalk, Conn
Rand Drill Co, 128 Broadway, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa

Air Drill.
Columbus Pneumatic Tool Co, Columbus, Ohio

Air Hose Couplers
Clark Co, W J, Salem, Ohio

Aluminum.
Pittsburg Reduction Co, Pittsburg, Pa

Annealing Boxes.
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa

Artesian Wells.
Bacon Air Lift Co, 100 Broadway, New York
Cole Bros, 102 Fulton st, New York
Conlan, P H & J, Newark, N J
Cook Well Co, St. Louis, Mo.
Gregory, Elisha, 123 Liberty st, New York
Phillips & Worthington, 11 Broadway, New York
Stothoff Bros, Flemington, N J
Williams Bros, Ithaca, N Y

Artesian Well Tools and Supplies.
Star Drilling Mach Co, 104 Fulton st, New York

Asphalt.
Commercial Asphalt Co, 11 Broadway, New York
Sicilian Asphalt Paving Co, Times bldg, New York
Warren Bros Co, 93 Federal st, Boston

Asphalt Machinery.
Cummer, F D, & Sons, Cleveland, O.
Erie Machine Shops, Erie, Pa
Iroquois Iron Works, Buffalo, N Y

Batteries (Storage).
Coho & Co, H B, 114 Liberty st, New York

Bearings (Ball and Roller.)
Ball Bearing Co, 2522 Market st, Philadelphia
Bantam Mfg Co, Bantam, Conn
Standard Roller Bearing Co, Philadelphia

Balances. (Assay and Analytical.)
Ainsworth, Wm. & Sons, Denver, Colo

Belt Dressing.
Dixon, Jos., Crucible Co. Jersey City, N J
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Canvas.)
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Chain)
Aultman Co, Canton, O
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Philadelphia

Belting (Leather)
Graton & Knight Mfg. Co, Worcester, Mass

Belt Lacing. (Steel.)
Bristol Co, Waterbury, Conn

Blast Furnaces.
Girard Boiler & Mfg Co, Girard, O
Means & Fulton Iron Works, Birmingham, Ala
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa

Blocks and Sheaves.
American Hoist & Derrick Co, St Paul, Minn
Boston & Lockport Blk. Co, 160 Commercial st, Boston
Hunt, C W Co, Richm'd Terrace, W N Brighton, S I
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
Yale & Towne Mfg Co, 9-13 Murray st, New York

Blowers.
American Blower Co, Detroit, Mich
Boston Blower Co, Business st, Hyde Park, Mass
Buffalo Forge Co, Buffalo, N Y
Connersville Blower Co, Connersville, Ind
Mass. Fan Co, Waltham Mass
Roots, P H & F M Co, Connersville, Ind
Sturtevant, B F Co, Boston, Mass

Blue Printing Apparatus.
Elliott Electric Blue Print Co, Pittsburg.
Emerson Mfg. Co, F W, Rochester, N Y
Keuffel & Esser Co, 127 Fulton st, New York
Pittsburg Blue Print Co, 1505-C Park bldg, Pittsburg
Soltmann, E G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston

Blue Print Paper.
Elliott Electric Blue Print Co, Pittsburg
Keuffel & Esser, 127 Fulton st, New York
Soltman, E.G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
(see also Instruments, Engineering, etc.)

Boiler Supplies.
Glasgow Iron Co, Pottstown, Pa

Boilers.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bacon, Earle C, 26 Cortlandt st, New York
Columbiana Boiler Co, Columbiana, Ohio
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Fairbanks, Morse & Co Chicago
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Works, East Boston, Mass
Iroquois Iron Works, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego, N Y
Leffel, Jas. & Co, Springfield, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
McNeil, Jas. & Bro, 29th & Railroad sts, Pittsburg
Means & Fulton Iron Works, Birmingham, Ala
Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Sharon Boiler Works, Sharon, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Variety Iron Works Co, Cleveland, Ohio
Warren City Tank & Boiler Works, Warren, O

Boilers (Water Tube.)
Babcock & Wilcox Co, 29 Cortlandt st, New York
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Keeler, E, Co, Williamsport, Pa
Walsh, W J, Holyoke, Mass

Bolt Clippers.
Helwig Mfg Co, St. Paul, Minn

Bolts. (Expansion.)
Church, Isaac, Toledo, O
Steward & Romaine Mfg Co, 120 N 6th st, Phila

Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis

Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md

Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, New Cumberland, West Virginia
McAvoy Vit Brick Co, 1345 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Tomkins, Calvin, 120 Liberty st, New York
Western Brick Co, Danville, Ill

Brick. (Fire.)
Maurer, Henry, & Son, 422 E 23d st, New York
New York Pottery Co, 12th ave & 36th st, N Y

Brick Bond
Union Brick Bond Co, Pittsburg, Pa

Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago

Bridge (Concrete).
Aberthaw Construction Co, Boston, Mas

Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st, New York
Vulcan Iron Works, Chicago

Bridge Railings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros, Bridge & Iron Co, St. Louis, Mo

Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Bush st & B & O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N
Easton Foundry & Machine Co, Easton, Pa
Eichleay, Jr., & Co., John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Joliet Bridge & Iron Co, Joliet, Ill
Kenwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, I A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co, Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phoenix Bridge Co, Phoenixville, Pa
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 220 Market st, San Franc
Scaife, W B, & Sons Co, Pittsburg, Pa
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Vaile & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works, Wabash, Ind
Youngstown Bridge Co, 320 Broadway, New York

Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago

Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Stuebner, G L, Long Island City, N Y
Union Iron Works, Hoboken, N J

Bumping Posts
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago

Bunkers (Suspension.)
Berquist, A S, 515 Bedford ave, Brooklyn, N Y

Burners (Oil.)
Hammel, C A 120 Fifth st, Los Angeles, Cal

Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Carson Trench Machine Co, 19 Dorrance st, Boston
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Telpherage Co, 20-22 Broad st, New York

Calking Yarn and Tools.
Ogden, J. Edward, Co, 149 Cedar st, New York

Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co, Bedford bldg, Chicago

Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y

Car Trucks.
Brill, Co, J G. Philadelphia, Pa

Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y

Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G. Co, Philadelphia, Pa
Commercial Ry Equipment Co, 120 Liberty st, N Y
Continental Equipment Co, 5-17 Battery Place, N Y
Efros Co, Chas, Bayonne, N J
Fairbanks, Morse & Co, Chicago
Ingoldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 68 Broad st, New York
National Drill & Mfg Co, 159 La Salle st, Chicago
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, G L, 176 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Narrow Gage.)
Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel, Arthur, 68 Broad st, New York

Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 247 Chestnut st, Brooklyn
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 233 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Glens Falls Portland Cement Co, Glens Falls, N Y
Helderberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Thorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 66 Maiden Lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y

Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co, 14-21 Park Row, N Y
Simpson H S, Electric bldg, Cleveland
Steubner G L, 175 Third st, Long Island City, N Y

Colleges (Engineering.) (see page IV.)

Concentrators.
Allis-Chalmers Co. Home Ins bldg, Chicago

Concrete Mixers.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractor's Plant Co, 37 Pittsburg st, Boston
Contractors' Supply & Equip. Co, 232 5th av, Chicago
Drake, C T, 300 W Jackson Boulevard, Chicago
Gilbreth, Frank B, 176 Federal st, Boston
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Eng & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y

Concrete Building Apparatus.
Farrell, Thos C, Washington, New Jersey

Concrete Steel Construction
Aberthaw Con. Co, 12 Beacon st, Boston, Mass
Concrete Steel Eng. Co, Park Row Bldg, N Y
Ronsome Concrete Machinery Co, 11 Broadway, N Y
Ransome & Smith Co, 11 Broadway, N Y
St. Louis Exp. Metal Co, St. Louis, Mo.
Turner Cons. Co, 11 Broadway, N Y

Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works, Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Conduits (Pipe.)
American Vitrified Conduit Co, 170 Broadway, N Y
Blackmer & Post Pipe Co, St. Louis, Mo
Camp, H B. Co, 170 Broadway, New York
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 39 Cortlandt st, N Y
Wyckoff Pipe & Creosoting Co., Stamford, Conn

Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'n Co, 1208 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, N Y
Eichleay, John, Jr, Co, Pittsburg
Esson, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 37 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gilbreth, Frank B, 176 Federal st, Boston
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 13-21 Park Row bldg, N Y
Murphy, J M & Co, Windsor Arcade, N Y
O'Rourke, John F, Park Row bldg, New York
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 4129 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Crane & Co, Inc, A M, The Rookery, Chicago
Gilbreth, Frank B, 176 Federal st, Boston
Kennedy & Co, L. E., 17 Broadway, New York
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Standard Supply & Equipment Co, Philadelphia
Wickes Bros New York and Saginaw, Mich

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 53 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
Southern Cresoting Co, Slidell, La
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote Wks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 18 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Carson Trench Machine Co, 16 Dorrance st, Boston
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill

Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & Son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Emerson Mfg. Co, F W, Rochester, N Y
Hein Furniture Co, Toledo, O

Draftsmen's Supplies. (see Instruments.

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos, G, 1110 Ayres Court, Evanston, Ill
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Hayward Co, 97 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo

Drilling and Boring Machines (Portable).
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 26th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools; also Rock Drills.)

Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila

Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass

Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 129 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Ruggles Coles Engineering Co, 41 Cortlandt st, N Y
Simpson, H S, Mfg's Agt, Electric bldg, Cleveland
West Pulverizing Machine Co, Jersey City, N J

Dynamite (see Explosives).

Dynamos.
C & C Electric Co, Central R R bldg, New York
Coho & Co, H B, 111 Liberty st, New York
General Electric Co, Schenectady, N Y
Storey Motor & Electric Co, Harrison, N J
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa

Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa

Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia

Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 71 Broadway, N Y

Employment Bureaus.
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock bldg, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Broadway, N Y
New York Engineering Agency, 35 Warren st, N Y

Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 360 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struthers-Wells Co, Warren, Pa
Temple Pump Co, 15th Place, Chicago
U. S. Wind Eng. & Pump Co, 20 Water st, Batavia, Ill
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W., Co, Richmond Terrace, W N Brighton, N Y
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y.

ADVERTISERS' CLASSIFIED DIRECTORY.

Engines (Steam).
Allis-Chalmers Co, Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicag
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas, & Co, Springfield, O
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre Pa

Engines (Traction).
Aultman Co, Canton, O
Heisler, Chas. L, Erie, Pa
Kelly, O S, Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

Excavators and Excavating Machinery
(see Ditching and Excavating Machinery and Steam Shovels.)

Exhaust Heads
Burt Mfg. Co, Akron, O

Expanded Metal.
Assoc Exp Metal Cos. Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 40 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 916 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 25 Church st, New York
Robertson, Jas. L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
International Fence & Fireproofing Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Fillet. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B, & Sons Co, Pittsburg

Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 92 Fulton st, New York

Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass

Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Hennebique Patents 1123 Broadway. N Y
Metropolitan Fire Proofing Co, Trenton, N J
Ransome Concrete Machinery Co, 11 Broadway, N Y
Ransome & Smith Co, 11 Broadway, N Y
Roebling Construction Co, 121 Liberty st, New York
St Louis Expanded Metal Fireproofing Co, St Louis
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)

Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York

Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y

Fittings (Flanged).
McLeod Co, 95 Liberty st, New York

Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y

Flue Lining (Fire Clay).
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y

Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago Ill

Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md

Forges (Portable).
Buffalo Forge Co, Buffalo, N Y
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa

Forgings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 508 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 2001-68 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa

Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
Koppel, Arthur, 66-68 Broad st, N Y
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces (Gas).
American Gas Furnace Co, 23 John st, New York

Furnaces (Oil).
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel).
General Fireproofing Co, Youngstown, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Galvanizing Kettles.
Columbiana Boiler Co Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Exhausters.
Connersville Blower Co, Connersville, Ind

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
... Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U. S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
International Fence & Fireproofing Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl St, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone, also Paving Blocks).

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Clark Co, W J, Salem, Ohio
Columbian Hardware Co, Cleveland, Ohio
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3876 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co Geo V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M, Co, Bay City, Mich
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, N Y
Pawling & Harnishfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steel Cable Engineering Co, 120 Liberty st, New York
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y

Hoists (Electric).
Hunt, C W, Co, Richmond Terrace, WN Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York

Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen N A, 1212-7 Herman bldg, Milwaukee
General Pneumatic Tool Co, Montour Falls, N Y

Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 508 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J

Hose (Metal).
Moore Chas. C, & Co, 32 First st, San Francisco

Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y

Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston

Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co. Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loetzer Valve & Mfg Co, Towanda, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York

Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co, 134 Main st, San Francisco
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co. Philadelphia, Pa

Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco

Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co. 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y

Injectors.
Hayden & Derby Mfg Co. 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio

Instruments (Engineering, Drafting).
Ainsworth, Wm. & Sons. Denver Colorado
Albrecht, C. R., 62 Fulton st, New York
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Alteneder, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly Spring Garden st & Ridge av, Phila
Hetterschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G. 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Cal
Mahn & Co. 300-302 Olive st, St. Louis
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 42d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 7th st, Philadelphia

Insulating Materials.
Standard Paint Co, 108 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co. Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Italo-American Trust Co, 725 Carpenter st, Phila
Julian Bros., 110 Mott st, New York

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kitson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co, Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 114 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Patton & Co, J. R., House bldg, Pittsburg, Pa
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Stamford, Conn
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk Chicago
Contractors' Plant Depot, 27 William st, New York
Driscoll, J. T., McCormick bldg, Chicago
Efros Co, Chas Bayonne, N J
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S Co, Empire bldg, Pittsburg
Saxton, J C, 18 Broadway, New York
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Whitney, O R, 39 Cortlandt st, New York

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 508 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Keuffel & Esser, 127 Fulton st, New York
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 86 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg, Pa

Meters (Water).
Buffalo Meter Co, 363 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Cole, E S, 135 Park Row bldg, New York
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 79 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton, E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S. Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 300 W Jackson Boulevard, Chicago

Motors (Electric). (see Dynamos.)

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Oilless Bearings.
No Am Metaline Co, 6 West av, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro
Robertson, Jas L, & Sons, 192 Fulton st, New York

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Michigan Paint Co, 65 Woodland ave, Cleveland, O
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 108 William st, New York
Toch Bros, New York
Zibell Damp-Resisting Paint Co, N Y

Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J, & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Southern Creosoting Co, Slidell, La
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049 51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 380 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y

Pipe (Riveted Steel).
Carroll-Porter Boiler & Tank Co, Pittsburg, Pa
Columbiana Boiler Co, Columbiana, Ohio
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Weigele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Abendroth & Root Mfg Co, Newburgh, N Y
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago

Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Bros & Co, Akron, O

Pipe (Wooden).
American District Steam Co, Lockport, N Y
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila P
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

ADVERTISERS' CLASSIFIED DIRECTORY.

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

Pipe Tapping Machines (See Tapping Machines)

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Bras Works, Cascade st, Erie, Pa
Clow, J B, & Sons, ke and Franklin sts, Chicago
Millar, Chas, & So o, Utica, N Y

Pneumatic Te ls.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
General Pneumatic Tool Co., Moutour Falls, N Y
Helwig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Press (Artificial Stone).
Palmer, Noyes F, 150 Snediker ave Brooklyn, N Y

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Esté, Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins dg, Chicago
Bradley Pulverizer Co, 92 e st, Boston, Mass
Clark J C, Box 525, Atla a, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 170 Broadway, New York
Newell Mfg Co, 149 Broadway, New York
Smidth F L & Co, 66 Maiden lane, New York
West Pulverizing Machine Co, Jersey City, N J

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 52 Keap st, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping-Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendalville, Ind
Goulds Mfg Co, Seneca Falls N Y
Guild & Garrison, So 10th st, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heisler Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 120 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 309 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 100 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y

Pumps (Artesian Well).
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 309 No Main st, Los Angeles, Cal

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lawrence Machine Co, Lawrence, Mass
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 15th Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 160 Commercial st, Boston
Edson Mfg Co, 255 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm. E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Scranton Steam Pump Co, Scranton, Pa
Snow Steam Pump Works, 120 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 309 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pumps (Rotary).
Connersville Blower Co, Connersville, Ind

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 135 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 200 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co. Cotton Exch bldg, N Y

Rails (Relaying).
Continental Equipment Co, 5-17 Battery Place, N Y
Donaldson & Newton, 421 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 902 Lewis bldg, Pittsburg
Johnson, Chas F, 908 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon, C J, 308 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Males Co, Ætna bldg, Cincinnati
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 126 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Riveting Machines.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Allen, John F, 370 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 178 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Oastler, W C, 157 Fifth ave, New York
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Liberty st, N Y
Rand Drill Co, 128 Broadway, New York
Rogers, John M, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J

Rolling Doors, Partitions, etc. (Steel)
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 103 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 18 Park Row, New York

Schools (Correspondence).
Am. School at Armour Inst. of Tech. Chicago
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Shuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Kinnear Mfg Co, Columbus, Ohio

Skylights.
Plenty, Josephus, Jersey City, N J
Vaile & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governors.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 200 East Main st, Louisville, Ky
Chicago Bridge & Iron Co, Chicago
Columbiana Boiler Co, Columbiana, O
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Theo, & Sons Co, Jersey City, N J
Snow, T W, 360 Dearborn st, Chicago
Strutners-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Esté, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Esté, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel Clips.
Streeter, H A 35 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 18 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 255 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, Jr, Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3218 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
National Skylight & Const'n Co, 120 Liberty st, N Y
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, E K, Co, 120 Liberty st, New York
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 35 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 894 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Tacks, Thumb
Albrecht, C. R, 62 Fulton st, New York

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal.
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1424 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Am Watchmen's Time Detector Co, 234 B'way, N Y
Imhauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Aloe, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Potter Mfg Co, 2010 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 32 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 7 Ludlow st, Dayton,
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia, Pa

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 47 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg, Pa
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Cornersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Millar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Sweet & Doyle, Cohoes, N Y
Thompson, J, & Co, Philadelphia

Varnish and Colors.
(see Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio
Tucker & Vinton, 156 Fifth ave, New York

Ventilators.
Buffalo Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Auburn Wagon Co, Martinsburg, W. Va
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
Kennicott Water Soft Co, 406 Great North. bldg, Chic
N Y Continental Jewell Filtration Co, 15 Broad st, N Y
Patterson, D W, Harrison bldg, Philadelphia, Pa
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governers.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Doble, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies.
Flint & Walling Mfg Co, Kendallville, Ind
Smith, A P, Mfg Co. Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 220 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 15th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co. Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Worm Gearing.
Morse, Williams & Co, Philadelphia, Pa

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 20th & Clearfield sts, Phila

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